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OBSERVATIONS ON THE FEVER OF TROPICAL CLIMATES,  
AND THE USE OF MERCURY AS A REMEDY.

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IT is not intended, in these observations, to give a theory of fever, or to treat of the *modus operandi* of mercury. I shall confine myself chiefly to a few remarks respecting that form and grade of fever, which so often occurs in Louisiana, and in warm climates generally; of the use of mercury in its *worst stages*, as a remedy chiefly to be depended on; and conclude by answering the objections made to its use.

Because I mention this remedy in particular, I hope it will not be supposed that I neglect the other remedies in common use, or place my dependence *solely* on this, even in the worst stages of bilious fever. My principal object is to shew that it is not only a safe medicine, but al-

most a certain remedy in high grades of bilious fever, *if given in proper doses*, and assisted by suitable stimulants. I say *stimulants*, because in the stage of the disease I here allude to, no evacuation or depletion would be safe, except that which the mercury will produce by its own action.

If I remove the prejudice existing against this valuable remedy, I shall effect my purpose. A very considerable part of the population of this state is descended from the French, and extremely averse to using mercury in any form; and generally, as much opposed to the use of the lancet; from an idea, I presume, that the mercury never can be eradicated from the system, and that the quantity of blood is already too small, or could not be supplied if any was taken away: an error founded on a want of correct physiological knowledge. My practice in this country, for the four years past, has convinced me that they, (blood-letting and mercury) are the remedies most eligible, particularly in the forms of fever which occur in the summer and fall months—but they must be used in a proper manner.

In the first attack of bilious fever, the blood-vessels are highly excited, and often become *depressed in a very few days*, from the violence of the disease. The pulse is either unusually full and strong, or *apparently* weak, from the oppression of the stimulus of disease, added to the natural stimulus contained in the heart and arteries, viz.—the blood. Bleeding, in either case, is required, to ease the heart and arteries. It removes one stimulus, that which is most oppressive; and as taking off part of a load from the shoulders of a weak man, enables him to go on easier, so blood-letting, in the commencement of fever, when the blood-vessels are weakened from the violence of the attack, enables them to circulate the remaining blood with more ease, and to regain their healthy action. The pulse, if it was depressed, immediately becomes fuller and stronger, and when not depressed, becomes softer and more regular. But where the disease has been suffered to run on, without proper depletion, it either prostrates the blood-vessels, and produces a grade of fever called nervous fever, (or typhus) or must impair their action, and occasion indirect debility. In either case, stimulants are the only anchor of



hope; and mercury affords one, the most *uniform and immediate* in its effect, as well as the most *lasting*. A few hundred grains (the quantity is not dangerous) introduced into the system, will excite a pulse, *fuller, stronger*, and more *durable*, than any other stimulus I have ever used in similar cases. Opium, and the diffusible stimuli, spirits, &c. excite the pulse for a few hours, and then it sinks lower than before. The stimulus of mercury is lasting.

But it is not from its stimulating quality alone, that mercury is so useful in bilious fever. It is from a peculiar, and I may say, specific quality, which no other medicine possesses. It is known that most medicines possess a quality adapted to excite action in some particular part of the system alone; for instance, tartar emetic excites the stomach, and produces vomiting; jalap excites the lower bowels; bark excites the blood-vessels and absorbents; opium and spirits excite the brain and nervous system generally, as well as the blood-vessels; mercury excites the stomach and blood-vessels primarily; next the glands, the liver, spleen, and particularly the salivary glands. Hence it is that mercury is of so much importance in diseases of the glands, and particularly diseased liver. In almost every case of fever which occurs in the summer and fall, we have evident symptoms of diseased liver; most generally there is a superabundance of bile. As the bile is produced by the action of the liver on the blood circulating through it, of course where there is a redundancy of bile, the liver must be somewhat disordered in its action. It is frequently inflamed; and I have seen a few cases where an abscess formed in the small lobe of the liver, and pointed externally, during the course of the fever. Many of the symptoms supposed to depend upon a diseased state of the stomach, or on the acrid quality of its contents, are, I am confident, owing to a diseased state of that part of the liver which lies immediately over the stomach; oppression at the pit of the stomach (*præcordia*) so frequently complained of, and which frequently occasions difficult respiration, sometimes hickup, nausea, vomiting, restlessness, &c.\* is no

\* B. K. who had frequently been attacked with bilious complaints, was taken with fever, and inflammation of the small lobe of the liver, in

doubt, occasioned by inflammation in the small lobe of the liver, extending in part to the diaphragm and to the stomach. The remedies which are most successful in such cases, prove the fact, viz. bleeding, when the pulse will admit of it, and mercury, when it will not. Opium; all the aromatic oils; demulcents and all the remedies used to relieve pain, or allay irritation, fail in curing entirely, or do not succeed in half the time that the two remedies above described will. I have succeeded in stopping hickup, which is generally a fatal symptom in low stage of fever, by giving a teaspoonful of calomel at a dose, when opium, oil of cinnamon, &c. had failed. Calomel is the form of mercury I have hitherto used; and have given it in doses proportioned to the violence of the disease, from two grains to one hundred, repeated every hour. There are stages of the disease, in which I should feel myself justifiable, from the good effects I have hitherto experienced from this remedy, given in doses thus adapted to the violence of the complaint, and the excitability of the system, to give two hundred grains, or a table-spoonful, at a dose. It is but trifling with the life of a man, to give him less of a remedy than his disease calls for. Every practitioner of medicine knows, that it is as often the case that no good is effected by giving too little of a remedy, as by giving too much; a small quantity of opium or laudanum, will sometimes do harm; whereas, if a dose proportioned to the state of the system, had been given, it would have had the desired effect; and the same observation applies to many other medicines. By giving too little of a remedy to counteract the disease, we but add a new stimulus to it, and hurry on its fatal issue.

November, 1809. The disease of the liver so much affected the stomach, that from the nausea, vomiting, &c. it was thought to be an inflammation of the stomach alone, and treated so for several days. He at length became extremely yellow all over, although the vomiting continued. It was soon discovered to be a disease of the liver; for it suppurated, and the abscess pointing externally, was opened. About a pint of purulent matter was discharged from it. I saw him only two days before he died, and advised calomel, in doses of fifty and sixty grains, every hour, together with opium and other stimulants. He appeared much better for some time after the mercury was administered: but his strength and excitability were exhausted, and he died in three hours after the abscess was opened.

It is a frequent custom among the French of this country, to commence their treatment of a patient by *preparing the way*, (as they call it) for medicine; which consists in giving ptisans and *lavements*. After a few days, they say, the stomach is prepared to *receive* medicine, and pour in an emetic. If this fails of curing, as fail it must if the disease is violent, they give more ptisans, perhaps a mild cathartic and more lavements; no calomel, by any means, and no blood-letting, although the fever should be so high as to produce delirium. They would rather run the risk of bursting a blood-vessel in the brain, from the violence of the action there, than take one drop from the arm.

This preparatory method is about as rational as it would be for a man, if his house had taken fire, to prepare for extinguishing it by removing every combustible thing from the inside of it, and from the neighbourhood around it, instead of throwing on water in the first instance.

The fever of this climate admits of no delay. It should be attacked in its forming state if possible: not by ptisans, but by active evacuants. The fever of this country differs, generally, but little from the yellow fever of large cities; and is very frequently of the same grade. Mercury is useful in every stage of this form of fever, but is particularly demanded in the higher grades and last stages of it: in the commencement, it is necessary as an *evacuant*, either as a cathartic or as an emetic. The turpeth mineral (subsulphate of mercury) is an excellent emetic in bilious fever. In the last or low stage of the disease, where the pulse sinks, the countenance becomes flaccid, the mind disordered, low delirium, disturbed sleep, incoherent ideas, tremors or twitching of the tendons, oppressive respiration, black discharges from the bowels, hickup, sometimes a yellowness of the whole body, &c. all of which shew the violence of the disease, and the tendency to a fatal termination of it; nothing, I believe, but *mercury in large doses*, together with the more diffusible stimuli, can be depended on to effect a cure.

There is one thing remarkable in this stage of the disease, which renders the administration of mercury *in*



*large doses*, the more necessary. It is, that the stomach and bowels are covered over completely with a kind of putrid and viscid matter, which, if it does not neutralize the mercury, in some degree, by its chemical quality, at least prevents it from being taken up by the absorbent vessels, and thus having its proper effect. I have not used any chemical means of ascertaining whether this matter destroys the active principle of the mercury, but I believe it does so in a degree. In every case of the disease which I have seen, in this stage of it, *whether the patient turned yellow or not*, the discharges from the bowels were of a dark colour; in many cases it resembled tar, both as to colour and consistence. In some cases it was of a dark green colour; and of a thick glutinous consistence, sometimes a light green; but always after the mercury had its desired effect, and a salivation came on, the discharge assumed a deep yellow, from the quantity of bile emptied from the liver, and the patient recovered in a few days, nothing but debility preventing immediate health. I shall hereafter give two remarkable cases of this kind. The diffusible stimuli in such cases could not *alone* be depended on. That they, sometimes may succeed, I know, but it is not where the disease is accompanied by diseased liver, putrid saburra and obstructed absorbents. Here mercury, as a more lasting and much more deobstruent and diffusive stimulus, is required. To aid it I have generally used the oleum sabinæ, the oil of cinnamon, wine or brandy, and occasionally opium; where it produced too lax a state of the bowels, which is seldom the case,\* externally blisters, the vegetable alkali, a strong decoction of red pepper and mercurial frictions.—While speaking of mercurial frictions, or mercurial ointment rubbed on the surface of the body, with a view to introduce the mercury into the system, I beg leave to make a few observations respect-

\* I must by no means omit to mention a very necessary and natural stimulus, without which, in this stage, all the rest will avail nothing. It is rich soup. By boiling a chicken until the bones can be removed, the flesh may afterwards be boiled until it mixes intimately with the water, and forms a very rich soup. The patient may, in this way, eat three or four chickens in a day, by only drinking a few teacups-ful of soup. It is best to give a few spoonsful at a time, and repeat it often, as a medicine.

ing extra cuticular absorption. A great deal has been said and written respecting the existence of absorbent vessels on the surface of the body. By some it is denied that any thing can be absorbed and carried into the system through the skin, others have as strenuously (from daily observation too) asserted, that the skin does possess a power of absorbing, or has absorbent vessels. Persons have immersed themselves in a solution or decoction of various substances, to ascertain whether they would thus experience the same effects as if the substances had been taken by the mouth. A solution of manna, salts, and other cathartic remedies have been used, and if these failed to purge, it was considered a proof that the skin did not absorb. This is no proof at all. We do not, when we wish to give medicines to evacuate the bowels, introduce them into the absorbent or sanguiferous systems, but immediately into the part to be operated on, viz. the alimentary canal. There is no positive proof, that I know of, that the remedies which occasion catharsis when introduced into the stomach, will do so too, when introduced into the absorbent or any other system. It has been attempted to account for the known fact, that mercury externally applied will salivate, by supposing that the particles of it which evaporate from the surface of the body are taken up by the nose and mouth, and thus get introduced into the system. This idea is as absurd as that which was started some years ago, that mercury acted merely from the small quantity of oxygen it contains.—The idea was occasioned by the fact, that many of the acids, particularly the nitric, will cure complaints for which mercury alone had before been given. No chymist now will hazard so ridiculous an opinion, as that mercury acts by means of its oxygen alone. So it is with the mercurial evaporations; all that the nose, mouth, eyes and ears together could collect of the minute particles of mercury which escape from the ointment rubbed on the body, would never charge the system with that medicine, or produce a salivation. The skin does absorb. The most simple experiment in the world will prove it. Let a person, in cool or cold weather, remain in a heated room long enough to excite a considerable degree of perspiration all over his body, and then let

him go out suddenly into a cool room, the perspirable matter is immediately absorbed and carried back into the circulation. No one can pretend that this is by increased evaporation: cold does not increase evaporation, but on the contrary, puts an immediate stop to it, and condenses vapour. Besides, if the skin possesses pores to suffer this matter to come out, why not have pores also to take in? For I have never heard it pretended that the perspirable matter, when collected on the surface of the body in large drops, came from the nose or mouth, but always through the pores of the skin.— Again; if it is argued that the cold constricts the skin and prevents the accumulation of the perspirable matter, and that, at the same time, the heat of the body suddenly evaporates what has already exuded; this can be proved to be incorrect by the following easy experiment.

Take some smooth polished hard substance, which cannot absorb, such as glass, (a common pane of glass, or a looking glass will answer) hold it over the steam arising from boiling water until it becomes of the same temperature as a man's body; it will of course collect on its surface a considerable quantity of steam, which will be nearly the same, in experiment, as the perspirable matter on the surface of a man's body; of course, when this piece of glass, thus heated and covered with steam is taken into a cold room, the steam ought to evaporate as soon as the sweat does on the human body; and so it does *evaporate* as fast, but it does not *disappear* as fast, *for the sweat is taken back into the body through the skin*, but the steam is condensed by the cold in the form of drops on the surface of the glass, and will remain there a considerable time longer, *even if the glass is placed over a small stove, to keep up a degree of heat equal to that of the human body*. If this is not proof of extracuticular absorption, I think it will puzzle the ingenious gentlemen who deny it, to account for the fact.

Mercury, then, rubbed on the surface of the body is taken up by the absorbents and carried into the system and the blood-vessels; this effect may be very speedily produced, when the patient will bear moving about: by first exciting the absorbents on the skin, by means of



heat, then wipe the body dry, rub on the mercurial ointment, and take the patient immediately into a cool apartment, and there continue to rub the ointment in; it will soon be absorbed and a salivation be produced in a much shorter time than it would otherwise have been. When the patient is too low to bear moving, my plan is to rub the surface of his body with a strong decoction of red pepper, or some similar stimulant to excite the action of the absorbents in the skin. The mercurial ointment then rubbed on is generally soon absorbed and answers the intention. This plan is particularly useful when the patient cannot take mercury fast enough by the mouth, where the stomach and bowels are coated over with the putrid, viscid matter, I have previously described, or where the skin is yellow, and particularly when vesicatory plaisters will not occasion a blister. There is another remedy which I have externally applied in such stages of this fever as I have described, and particularly where the skin was yellow. It is a solution of the vegetable alkali. I have only used it in three cases and therefore cannot hazard many observations respecting it. In those cases I believe it was of considerable service; the skin was yellow, but altered its color for the better very fast. Whether it destroys the septic acid which Dr. Mitchill of New-York believes to exist in disease I will not say; I rather believe its chief good effect is derived from its action on the bile diffused through the skin; by being absorbed and mixed with the bile, I believe it so alters its quality as to dispose it to be carried into the general circulation and thus eliminated from the body. Perhaps it is useful by both of these effects.

I shall next proceed to give the two cases I promised, and conclude by answering all the objections I have heard made against the use of mercury in fever.

#### CASE I.

In October, 1811, Dr. Isaac A. Smith from Virginia, who settled in this village in 1809, and enjoyed previously very good health, was taken unwell in the usual way of the commencement of bilious fever, pain in the head, back, loins, restlessness, fever, &c. He used

the common evacuants, cathartics, emetics, and had taken a considerable quantity of calomel, so much as to suppose his system charged with it, but this was not the fact as was afterwards proved. I only saw him occasionally; he did not appear to be at all dangerously ill, and it was believed that mercury in doses of two or three grains twice or three times a day would be sufficient to cure him. He complained, however, very much of heat and difficult respiration; some person was obliged to be continually fanning him, yet his pulse and countenance indicated but little disease. After some days he went a few miles into the country to recover his health; his disease soon shewed itself to be of the most violent nature, slight apparent fever, delirium, and small pulse, yellowness of the skin, cool extremities, dark colored tongue, &c. &c. He commenced taking immediately calomel by the teaspoon-full (it was useless to weigh it when the proper dose could not be precisely determined on,) the dose was repeated nearly every hour and gradually increased, for three days: with every second dose he took from 10 to 16 drops of the oil of Amber, and occasionally a few drops of the oil of Cinnamon. These stimulants were varied that neither should lose its effect by repetition.—Brandy and water. rum, &c. were also given freely, and a teacup-full of rich soup every hour or two. Fortunately his stomach retained every thing very well, and to enable it to do so, a blister plaister was applied over it; vesicatories were also applied to his wrists and legs; they did not draw well. His body, including the blistered places, was washed in a strong decoction of red pepper. A vesicatory applied on his head drew but very little, and shewed considerable tendency to gangrene; it was also washed with red pepper, and dressed with mercurial ointment, his body was frequently rubbed with this ointment. The discharges from his bowels were black and very offensive. The third day after using these active remedies, the color of his skin began to change for the better, and sensibility was considerably restored to the surface of his body, particularly on the blistered places. The fourth day shewed something like a salivation, color of his skin nearly natural, eyes much better, mind rational, stools lighter colored,

some thirst, which was much easier satisfied by brandy and water than by water alone. Sixth day, much on the mend in every respect, a ptyalism had commenced, the mercury was no longer used, and that which was on the surface of his body was washed off. The remedies now used were spirits and water, wine, Peruvian bark and soup. The excrementitious discharges soon gained their natural colour. The purging was by no means troublesome; debility and a sore mouth were all that remained to be cured; the mouth however was not more sore, nor was there more ptyalism than I have frequently seen in cases where only twenty or thirty grains of calomel had been given in the course of, perhaps, two or three weeks. Here the Doctor had taken in four days, upwards of a thousand grains, I am confident. Some days after the salivation commenced, a tough membranous substance separated from the inside of his throat and was discharged; I have seen this occur in several other similar cases; it is similar to the membrane found in the trachea in the disease of children called croup (*cynanche trachealis*) and, I believe, is formed by inflammatory action in the vessels of the part, at the commencement of the disease, and thrown off by the return of healthy action in those vessels after the use of the remedy which cures it.

#### CASE II.

Joseph Williams, about 18 years of age, native of this climate, of delicate constitution, and rather of the consumptive predisposition, had been unwell for several days, but not so much so as to confine himself to the house. August 2d, 1812, he became alarmed from the yellowness of his skin, and made application for medical aid. I treated him, at first, with the usual remedies for bilious fever; an emetic, febrifuge powders, &c. But the disease soon shewed itself to be of a grade, which would not be conquered by mild means. The yellow appearance of his skin, I did not consider characteristic; but the pulse indicated a grade of disease which required something of more than ordinary power to counteract it. His stomach was much disordered,



and the medicine he had taken lost its effect ; part was thrown up, and the rest neutralized. I commenced the use of calomel *as an alterative* ; the second day after I first saw him. Ten grains were given every four hours, and the dose was doubled every day, until he, at length, took fifty grains at a dose. In twelve hours after the administration of the calomel, the black, putrid matter began to be discharged from his bowels. The first discharge was of a dark colour, much resembling tar. It then turned a green colour, and very much resembled the vegetable matter which collects on rocks, and in stagnant water. After he had taken about a thousand grains of mercury, the salivation became complete ; the discharges assumed a more healthy appearance ; his pulse became regular, the yellow colour left his skin, his eyes resumed that *lustre so expressive of health* ; and nothing remained to be treated but his mouth. The salivation was not greater than it generally occurs when but little mercury is given ; but his mouth, on the left side, was sore for a considerable time. Astringent gargles, and the free use of Peruvian bark, brandy, and other stimulant and tonic remedies, roused the system, and restored its healthy action. He took, generally, a quart of brandy every twenty-four hours ; and two ounces of Peruvian bark, but this disagreed with his stomach so much, that he was obliged to intermit its use, sometimes for a day. To enable his stomach to retain the medicines, vesicatory plaisters were laid over it, and the whole surface of the body rubbed with a strong decoction of red pepper. The debility which took place after the disease was cured, was so great, as to occasion *gangrene* on the extremities. But the stomach so far recovered its tone, that it was enabled to retain a sufficient quantity of bark to support the powers of life, and to restore the wonted excitability of the system.

Besides the mercury which was given internally, he was rubbed all over the surface of his body, with a strong mercurial ointment, three times a day, immediately after the use of the decoction of red pepper ; which I used, in part, to excite the absorption of the Cinchona bark, which his stomach rejected.

After a complete salivation came on, the same occurrence noticed in the preceding case, took place. "A tough membranous substance separated from the inside of his throat and was discharged." It would be useless to enumerate every symptom, or occurrence in this case. Enough has been described, to shew the violence of its grade to a physician; and it would avail but little good to mention symptoms, of the nature of which, all other persons must be ignorant. Suffice it to say, it was a disease which combined most of the indicatives of a fatal termination—and I believe, could not have been cured by any medicine less powerful in its effect than *mercury*; nor by this, if it had not been given in *large doses*. He is now in perfect health.

I shall next endeavour to answer some of the objections urged against the use of mercury in fever—I say in *fever*; for almost every person, even the French practitioners themselves, use mercury in a certain disease, if not in more than one disease.

All the objections to it may be reduced to one, viz. That it is an *innovation* in the practice of medicine. Mercury has, in some form or other, been in use as a medicine, time immemorial. Like opium, and many of the strong and valuable remedies, its use was at first confined to a very few diseases, for which it was used as a *specific*. But the doctrine of *specific remedies* has long since been abandoned; and mercury, as well as many other remedies of the same powerful nature, has become in general use as an alterative medicine; not in any particular *species* of disease, but in every *form* of it where the system requires a material alteration in its function, to counteract the disease. Blood-letting was once used only in pleurisy. If the patient complained of a pain in his breast, or side, it was considered a sufficient justification of blood-letting; the pulse, which is the only infallible index of the system, was seldom or never consulted. We now know that it is not always *safe*, much less *proper*, to take blood when the patient complains of pain. Sometimes pain can only be relieved by stimulating remedies.—On the other hand we know, also, that blood-letting is frequently required when no pain exists; the action of the arterial system indicates the necessity of it.



Many other remedies for diseases have, in like manner, undergone considerable changes in their use. As time develops the laws of organic life, and the properties of medicines;—as the discriminating reason, and indefatigable efforts of man discover, more and more every day his nature, and the various relations subsisting between the products of the animal, vegetable, and mineral kingdoms, we improve in all the arts and sciences. Medicine is no longer considered an art—it is a science. The innovations, then, which arise in it *are the result of new discoveries and more correct information*. There was a time when cold water was entirely prohibited in the most burning fever—bed clothes were heaped on, and warm drinks of stimulating spices were given, *as they then said, to force a perspiration*. What physician would use this practice now? The result was, that it was considered a very rare thing indeed for a patient to recover, if he was attacked with a pleurisy, or any violent species of fever. Since this unnatural practice has been laid aside, and physicians prescribe for the *state of the system*, and not for the *name of the disease*, it is a rare thing to hear of persons dying from fever or inflammatory diseases.

The use of mercury has become extended from a more intimate knowledge of its properties and effects on the human body. It was not the effect of chance, or ignorance; as has been very foolishly intimated.\* In the East Indies it has been in use for many years past, in

\* An old gentleman of this vicinity, who seems to be a quack in medicine, in conversation with a patient of mine, some weeks ago, whose mouth had been a little affected by the calomel he had taken for bilious fever, observed that he had been for some time trying to find out where the use of mercury (so pernicious a remedy) originated, and had at length (with much hard study, no doubt) discovered that it originated in Batavia—some Dutch empiric having commenced the use of it there, *with success*, in fever. It argues nothing against the use of the remedy, that it was attended with *success*, even if the person employing it was a quack. But I must beg leave (in defiance of the old gentleman's *good sense*) to observe that he is mistaken.

It was not accident that brought ~~this~~ valuable remedy into use, although I acknowledge many valuable remedies have been discovered by mere accident; for instance, the Cinchona, or Peruvian bark, now so generally in use as a remedy for fever, was discovered by its salutary effects on the countess of Cinchon, merely by accident. And it has derived its name from this accident.



almost every species of disease to which the inhabitants of that climate are subject. In the West Indies it has, also, been very much used for many years past, and has now become the general remedy used in that kind of fever termed "Bilious fever"—not merely as an evacuant, but as an alterative and stimulant. It is used, also, in all complaints of the liver, whether attended with fever or not. It is used in large doses, and successfully. Dr. Dancer, in his very valuable work, which I have just seen for the first time, entitled "The Medical Assistant, or Jamaica Practice of Physic;" under the head of 'Fevers' observes, 'The quantity of mercury required to be rubbed in, and calomel taken, is sometimes very considerable—*More than one thousand grains of calomel have in some cases been given, and several ounces of mercurial ointment rubbed in, not only with impunity, but with success, the patient having recovered.* In the case of Wm. Gow, mentioned by Doctor Chisholm, five thousand seven hundred and four grains of mercury were given, and the patient recovered.' The Doctor mentions a number of cases where calomel was given in large doses—and observes, 'None of those whose salivary glands (the mouth) were affected, died,' These observations were particularly intended for yellow fever: but they apply, equally, to the grade of bilious fever I here allude to. Yellow fever is now, generally, considered merely the highest grade of bilious fever.—All the symptoms which are peculiar to it; black vomit; prostration of muscular action, occasioning weak pulse; debility of the locomotive muscles, faint speech, tremor, &c. are occasioned by its *grade* only, and not by any specific difference in the disease itself. The yellowness of the skin shews nothing respecting the violence of the disease. It is merely a local effect, and occurs frequently (as in jaundice) where there is very little fever and no danger. Doctor Rush, the father of the American practice of medicine, observes, that instead of its always appearing in the same form, sixteen different forms may be enumerated. It is the *grade* of the disease that is to be regarded, and not any particular collateral or attendant symptom. *The Doctor, also, says, 'a salivation, if it could be produced in twenty-four hours, would be the best remedy.'*

It is argued against the use of mercury, that the constitution is injured by it. Can the constitution suffer more from the remedy which *cures* the disease, than it does from the disease itself? How is it possible that a medicine which counteracts and entirely destroys a disease preying on the vitals, can be injurious to the human body? If it assists the natural functions of the body to throw off the incumbrance which prevents their healthy action, how can it be injurious to health? Because it is a powerful remedy, and exerts itself so forcibly on the system, it is considered a poison. But which is the worst poison, a disease which will destroy life in a few days, or the remedy which will destroy the disease, and leave the system in health? It would be arguing against the wild imaginations and futile arguments of a child, to say more in answer to this foolish objection. *The force of the remedy must be suited to the violence of the disease.* Mercury being stronger, and more safe than any other medicine in general use for violent diseases, and acting universally over the whole system, will cure diseases which cannot be cured but by such a remedy. I say *more safe*; no person ever died from too much of any mild preparation of mercury, that I have yet heard of. There are two methods of curing a disease; *abstraction and counteraction*: The one or the other will suit best, according to the nature of the disease. Sometimes, *but not always*, one plan will suit as well as the other; AND THIS ACCOUNTS FOR THE SUCCESS OF OPPOSITE PRACTICES. When the disease is in its *forming state*, or of a *moderate grade*, i. e. not transcending the inflammatory grade of action, the cure will be effected by ABSTRACTING from the system the stimulant, contained within it—viz. the blood, the direct stimulus to the heart and arteries, which are the seat of fever, by blood-letting; the contents of the stomach and intestinal canal, by emetics, and by cathartics; the perspirable matter, which often becomes acrid, by sudorifics, &c. But when the disease is of long duration and the general system much impaired, or where it transcends the inflammatory grade, and prostrates the powers of life, the plan of cure depends on COUNTERACTION i. e. by exciting a new action, and one stronger than

that of the disease, in that system where it is principally seated. Here the judgment of the physician is required to choose that form of stimulus, or that alterative medicine, which will exert its action on the part primarily, or principally diseased. Mercury acts on the blood-vessels and glands: they are the parts of the general system, principally, if not primarily affected in bilious fever. Here mercury, in some form or other, is the remedy most to be depended on in the high grade of bilious fever. Calomel, being a mild preparation of it, and not disagreeable to the taste, is the form in most general use. But it is by no means my intention to give a theory of medicine; I only wish to give so much of the outlines of a correct theory as will suffice to explain the arguments I adduce, that it is an "*innovation*." The objections, I am confident, will die as fast as those which were urged, with much more propriety, against the use of opium.

1st. It is said that mercury is a dangerous remedy, because it *remains in the system*. This is an opinion of the people. No physician will venture to hazard an assertion so erroneous. If it remained in the system, we should not be obliged to have recourse to its use a second time; which we frequently find necessary in a certain disease; indeed in many. What keeps it in the system? Do bread and meat remain in the system forever? No. Why then should a metallic substance, foreign to human nature, or foreign to the materials which compose the human body, be retained in the system? We know that every heterogeneous substance, which is introduced into the human system, immediately produces an action of the system to throw it out. Mercury is a substance foreign to animal matter; therefore mercury cannot remain in the human body. This fact is evident, and wants no argument to prove it. Why does the copious discharge from the mouth occur, if it was not that the mercury excites an action in the glandular system, to discharge it from the body? *when the mouth is well, (and frequently much sooner) the system is entirely free from the mercury.* Can a splinter of wood, of glass, of iron, or of any other material foreign to animal matter, remain in any part of the body, without exciting an



action of the part, which throws it out? No. Neither can any medical preparation, much less so active a medicine as mercury. I may go farther: None of the fluids of the body remain long in the system. The blood is continually becoming supplied, from the aliment we take, in order to fill up the waste occasioned by the secretion of the various glands of the body, viz. the liver, kidneys, salivary glands, pancreas, &c. Hence the same blood which now circulates in our veins, is probably entirely discharged from the body in one month, by means of the glandular secretions, and its place supplied by a part of the food we use. How then can mercury remain? Where would it find a place, if the blood it had united with was entirely discharged from the system? Certainly it must be discharged also.

The 2d objection to the use of mercury is that it weakens by purging, when given in large doses. This would *seem* to be a fact from its effect when combined in small doses with jalap. In several instances I have been obliged to have recourse to other means of discharging the putrid matter contained in the bowels. After the salivation commences, the mercury does generally occasion a little purging; but this is easily checked by opium and mild astringents, very frequently by porter or Port wine. But previous to the salivation, the oftener the doses are repeated the more it prevents catharsis. Many other valuable remedies will sometimes have a cathartic effect on the bowels; for instance Peruvian bark; and yet who would not give Peruvian bark, where it was required, knowing that its purgative effect is so easily checked by any preparation of opium?

3d. It is said that when the salivation does come on, after giving so much mercury, it will be so severe as to injure the constitution, or endanger the life of the person.

In answer to this, I first aver that in no instance will the salivation be greater, if care is taken to stop the mercury as soon as it shews its effects on the salivary glands, than it is in ordinary cases where but a few grains are given. I account for this by supposing that the mercury is chemically neutralized, in a degree, by the acrid contents of the stomach, as I have before said.

At all events, it is a fact that it loses much of its effect, or else so great a quantity would not be required to cause a salivation. Therefore, perhaps, but little more mercury is, *in reality*, introduced into the circulating fluids of the system, in cases where so much is required to be introduced into the stomach, than in cases where but little is administered. Next I aver that nothing can endanger the life, or constitution of a person which cures his disease, unless the remedy is continued to be used improperly after the disease is cured. I believe the disease completely cured, i. e. counteracted, as soon as a complete salivation takes place. The strongest acting power has been conquered; and nothing but debility remains to be attended to, except the conducting the patient safely through the salivation. Upon the whole, I am confident that if no more of the remedy is given than the disease requires, no bad effect can take place from the quantity; and I believe ten grains as liable to do harm in some cases, as ten thousand would be in others.

4th. The bones become affected by it.

This objection may be considered a part of the preceding; and the same reply will, I think, shew the fallacy of the opinion. Besides, it must always be recollected that nobody has ever seen a case of diseased bones from the use of mercury alone. It affects the whole system, and of course the bones; but it does not leave them diseased, unless they were so previous to its administration.

5th. I will say nothing about the disagreeableness of its effects, viz. its causing a sore mouth; as I am confident the sore mouth will never be considered worse to a patient than the fever; and I have never yet met with a person, that was not very willing to purchase his life, and the prospect of long health, at the expense of a sore mouth for a few weeks.—I say *purchase his life*, because I know mercury has cured diseases which could not have been cured by any other medicine we are yet acquainted with.

6th. It is supposed, by some, to hasten the approach of old age. I believe directly the reverse to be the fact, if it is only used as a remedy; that is, when the system,

being affected by disease, requires its use. It may be called a *detergent*, for it seems to drive from the body every foul humour, and give to the functions of life a renovated tone. I have never seen a person who had recovered from a complete salivation that did not appear much *younger*, and in better health than he had for a long time previous to the use of the remedy. I mean where the salivation was conducted in a proper manner. It is also known, that many persons who had been in a low state of health for several years, have entirely recovered from the use of mercury as an alterative, and continued to enjoy good health for many years after, and arrived at "a good old age." Mercury does not impair the functions of the body; it rather rouses them and gives a new life to them. I cannot see how it is possible that it should produce a rigid fibre, or hasten the approach of old age; and I beg leave to conclude, as I commenced, by observing that although I, by no means, advise this as a general or universal remedy in all grades of fever; or in many other forms of disease; and do not, perhaps, use it oftener than many other persons, yet I am confident, it is a remedy called for *often* when it is not given; that bilious fever in its worst and last stage can scarcely be cured by any other remedy; that it is then required to be given in *large doses*; that the dose must be *proportioned to the state of the system*; and finally, since the GOD of NATURE has made us liable to be affected with disease, in a variety of forms and grades; since such is the frailty of our nature, that we are daily exposed to a thousand noxious agents, existing in the atmosphere as well as on the earth, it is well for man that he has been endowed with wisdom to discover so powerful a remedy, and to give it its just rank in the long catalogue of medicines that have, from time immemorial, been in use successively in the world; and it is but a just tribute to endeavour to remove the prejudices existing against it.



PRACTICAL OBSERVATIONS ON THE CROUP. IN A LETTER FROM MOSES WILLARD, M. D. OF ALBANY, DATED DECEMBER 2, 1812, TO THE EDITORS.

I HAVE seen in the 2d vol. of the American Medical and Philosophical Register, a letter written by Dr. Hosack, to A. R. Delile, M. D. &c. *on Croup*. This elaborate treatise, together with the numerous opinions which have of late been advanced on this subject, leave but a few gleanings after so general a harvest. In the course of 30 years practice, I have had many opportunities of seeing this disease; and, agreeable to my observations, there is much propriety in dividing it into the idiopathic and symptomatic. I have always found the croup attended with the symptoms described by Dr. Hosack, and have always considered it is an inflammatory disease, nor do I conceive how we can account for the phenomena exhibited in it upon any other principles.

We find air is capable of being loaded with a great quantity of water, and as the air is constantly passing through the windpipe, in the act of respiration, it is necessary that the internal membrane which lines the windpipe, should be liberally supplied with a fine, mild, and bland fluid, to defend it from the irritating and drying effects of the air. In proof of this, we need only to advert to the disagreeable sensations we often feel in the windpipe, in cold frosty weather, when the atmosphere is deprived of the greatest part of its aqueous matter, and of course conducts off from the windpipe too great a quantity of this fluid, leaving the parts in a dry, irritable state, exciting cough and difficult respiration. In order to obtain an idea of the quantity of this fluid, which is constantly conducted off from the windpipe and lungs, we need only breathe on a cold condensing, and polished substance, as glass, or marble, and we shall find a considerable quantity may soon be collected. Let us then, in view of these facts, suppose a child, suddenly exposed to cold in whatever way it may be, so as to bring on this disease in the windpipe; the effect will naturally be from the first stimulating operation of cold, an increased exhalation of matter in the part, but soon after, from the

increase of inflammation and heat, this fine fluid will become so much inspissated, that it will not be taken up by the particles of air in the act of respiration, and of course the air will only act by pressure, which will be greater and greater, as the matter is accumulated, until it is condensed into a membranous state.

But the mortality of this disease does not, in my opinion, merely depend on this circumstance.

There is an all-pervading substance, on which both animal and vegetable life depend.

It is a fact, universally known, that if a number of persons are confined in a small place, that the air soon becomes unfit for respiration; and unless fresh air be admitted, the consequences must be fatal to those who are thus confined.

From hence it appears that in health, air is taken into the lungs, and as soon as it parts with this vital principle it becomes obnoxious, and is therefore speedily forced out. This is also evinced by that languor and debility, we feel in certain states of the atmosphere, when it does not afford us a sufficient quantity of this vital principle, in order to produce that energy both of body and mind, which we feel at certain other periods. It appears from dissections, that this membrane extends through all the ramifications of the bronchial vessels, so far as they can be traced with the knife.

This being the case, it appears to me, that death is not merely the consequence of this membrane producing suffocation; but that the system is deprived of that living principle, as it cannot be conducted through this tenacious membrane into the system in order to keep up a constant supply of this living and animating principle.

If this be the case, it will afford a conclusive argument, why *tracheotomy*, or an opening into the windpipe could not prove successful in this disease, as proposed by some physicians. Moreover, as this preternatural membrane extends through all the ramifications of the trachea, it would be impossible by any mechanical means to detach and extract it.

We find that all the cavities of the body, which have no natural communication with the external atmosphere, are furnished with absorbent vessels, in order to absorb

the superfluous lymph deposited in them. But as it respects the internal part of the windpipe, I much doubt its being supplied with absorbent vessels. I can find no anatomical writer who mentions their existence in this part; nor do I see any necessity of this provision in this part, as the air in the act of respiration performs the office of absorbents, by conducting off the superfluous quantity of fluid in the manner above stated. Hence, I cannot conceive that this disease can arise from a debility and torpor of the absorbents of the trachea, as supposed by Dr. J. Stearns; nor can I conceive if this state of debility did take place, how a state of debility and torpor in the part, could so inspissate the fluids and condense them into a membranous state, which evinces the necessity of preternatural heat, as well as increased action, to produce this effect.

In a state of health the cavity of the thorax is furnished with a quantity of a fine and mild fluid, which serves to moisten and lubricate the parts, so that they may move easily one upon another. But in case an inflammation takes place, this fluid becomes inspissated and appears to serve as a cement to unite membranous parts, by which an adhesion takes place, as has been frequently found to have been the case in dead bodies. In the *croup*, the same process of nature takes place; and could the sides of the windpipe be brought into contact, I have no doubt but they would adhere together, and I think it very probable, that in the small branches of the bronchia this may be the case, as they have no cartilaginous rings as in the larger parts, to prevent their sides coming in contact. This idea is supported by the observations of Dr. Bard, and also by Dr. Cheyne. Dr. Bard says, that the disease is not even limited to the trachea and bronchia, but that the lungs, throughout their whole substance, to a certain degree participate in this affection; insomuch, that he has seen these organs rendered so dense and solid, that they exhibited, in their appearance, a great resemblance to the firm and dense structure of the liver, instead of the spongy lean texture which the lungs naturally present.

Considering the *croup* in this point of light, as to its nature and effects, it is truly a very alarming disease;



and experience must have abundantly taught the physician of observation, the necessity of the most speedy and salutary method being adopted, in order to conquer the disease, before it arrives to what Dr. Hosack calls the *almost fatal stage of croup*.

If the above observations be true, I think it may be denominated really the fatal stage of the croup. As far as I have been able to observe, this is in fact the case, as I have never seen any one recover from what I understand to be this stage of the disease.

In the treatment of the croup, I formerly made use of the warm bath ; gave tart. emet. and ipecac. as emetics ; purged with calomel, &c. : gave the solution of the emet. tart. to keep up the action of the glandular system, &c. But about the year 1795, I was led, from particular circumstances, to adopt the use of calomel and the *cerated antimony*, (vide my observations on remitting fever, at Albany, 1809.) After having used these medicines combined together, in some other diseases, and perceiving their salutary effects in exciting the action of the glandular system, I was induced to use them in the *croup* : their effect has not disappointed my expectation, when they could be used in due season. I have combined them, by rubbing together two parts of the calomel to one of the cerated antimony. Of this composition I gave from 12 to 15 grains, thoroughly mixed in molasses, to a child of a year old ; and if necessary repeat it, until it has an active effect, by vomiting freely, and also producing a few discharges by stool.

To children who are older I increase the dose : for instance, to a robust child of 7 or 8 years old, I give from 18 to 25 grains ; and as soon as the medicine is given, I direct the patient to be immersed in the warm bath.

This simple mode of treatment, in general, in the forming stage of the disease, effects a cure. If, however, after this has been done, there remains any appearance of the disease, agreeably to Dr. Archer, I direct the *polygala Seneca*. If the 2d, or febrile stage takes place, I think that bleeding is proper, together with other means usually made use of. By this mode of treatment I have had but little difficulty in managing this disease in general. But in the third, or fatal stage, I know **nothing** that can be depended upon.

I was called to Mr. Gerardus Van Schoonhoven at Waterford, in consultation with *Dr. I. Stearns*, July 6th, 1802, to see a child in the *croup*; at which time I communicated to him the success I had had in the use of the calomel and cerated antimony, in treating this disease. This mode of treatment appeared to be new to him: he, however, was desirous that the medicines should be given, and wished to know if I had them with me. I told him I had, but at the same time observed to him, that I thought this remedy would be of no use in that case, as the child had advanced to the fatal stage of the disease. He, however, thought best to try the medicines; and I therefore, at his request, left with him two doses, one of which I understood was given, but without being of any service, as the child expired within the course of 24 hours, as I was afterwards informed.

Since that period, it seems, my friend *Dr. I. Stearns*, has been in the habit of using these medicines in the *croup*, with success, agreeably to what I have understood by his publications on that disease. It seems, however, that he has exhibited them in much larger doses than I have found necessary: this however may be for the better, and an improvement on the mode of treatment, which may be ascertained by farther experience.

The above case is one among a number of instances where I have had occasion to lament the inefficacy of the most successful means in the last or fatal stage of this truly dreadful and alarming disease.

*Albany, Dec. 2, 1811.*

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## THE FUNCTIONS OF THE SUPRA-RENAL GLANDS.

BY THOS. D. MITCHELL, OF PHILADELPHIA.

*Read before the Cabinet of Sciences.*

THE last number of the *Medical Repository* contains some remarks on the use of the supra-renal glands. My objections to the author's sentiments on this subject, have arisen from a careful attention to this obscure part of physiology. Theories, whose influence on medical practice might be extensive, should always be scrutinized, before

they are made the basis of the physician's judgment. Impelled by this sentiment, I shall now offer, what I conceive to be the truth, as supported by analogy, and established fact.

First then, I shall mention some of the offices that have been assigned to these bodies. It has been said, that they furnished lymph, for the dilution of the blood, returning into the renal veins, after the secretion of urine. Some have imagined, that they restored to the blood of the vena cava, the irritable parts which it loses in the secretion of urine and bile; others, that they conveyed something useful to the thoracic duct; and lastly, it has been conjectured, that in the fœtus, they seemed to divert the blood from the kidneys, and thereby lessen the quantity of urine.

These are ancient opinions, and have received, at various periods, the support of physiologists. The last mentioned theory is, in my opinion, the most correct; because it is consistent with fact and can be supported by analogy.

The use ascribed to the supra-renal glands, in the last number of the Repository, is simply an application of the theories of the ingenious Dr. Rush, relative to the use of the spleen, thyroid gland, &c. According to it, therefore, we must believe, that the supra-renal glands are *waste-gates* to the kidneys, throughout the whole course of life.

To this, then, I object; first, that their size is too small to induce the belief, that they can possibly serve in adult life, the purpose of a waste-gate to the kidneys. It is more than probable, that they will not contain half an ounce of any fluid, and it is absolutely certain, that blood is seldom, if ever, found in them. When they do contain any thing, it is a "dark-coloured, bilious-like matter," of such a nature as to have been deemed a mass of putrid substance.

Secondly; They are frequently incapable of holding any fluid, (that is in adult life) not having, in many instances, a cavity.

Thirdly; Their arteries are not of so large a size as to induce me by analogy, to apply to them, the same use as Dr. Rush has ascribed to the spleen. For these reasons then, I object to the theory of the supra-renal glands, as published in the Repository.



It has been said, "that the use of these glands, is to divert the blood from the kidneys, and thereby to lessen the quantity of urine in the fetal state." This theory, I conceive to be more correct, than any other known at the present day.

Dr. Rush has published a theory on the use of the *thymus gland*, beautiful in the estimation of all, and in my opinion correct. I believe the supra-renal glands to be to the kidneys, what the thymus gland is to the lungs; with this exception, that the functions of the latter, continue till the twentieth year of life, whereas the former, as I think, ceases to be of any real service, after the first year of life.

Is the thymus gland larger in early infancy, than at any other period of life? So are the supra-renal glands. Does the thymus gland never entirely disappear? Neither do the supra-renal glands. Are the arteries of the thymus gland small? So are those of the supra-renal gland. Does the thymus gland decrease in size, as the period of puberty approaches, because the exigencies of the infantile system, only, require its existence? So, in like manner, the supra-renal glands lessen in size, as the force of muscular contraction increases, thus rendering a waste-gate to the kidneys useless, after the 1st or 2d year of life.\* The contractile power of the fetal bladder is so weak, that nature, no doubt, employed the supra-renal glands as reservoirs of a portion of blood, which would, otherwise, have been converted into urine, thereby producing a more frequent fulness of the bladder. To remedy the defect in muscular power, was the ultimate object of the *musculi pyramidales*, according to the ablest anatomists. They are so situated, as to aid in evacuating the contents of the bladder.

\* Having seen a wax preparation of the internal urinary organs, shewing these glands connected with the kidneys, made by Dr. Joseph Chiappi, from Rome, whose unrivalled skill in that kind of imitation we had occasion to notice, page 397, vol. xv, we inquired from him, all particulars he might have observed in the *glandulæ renales* by numerous dissections. He affirms, 1st, that their shape and small size remain stationary from the age of three years and upwards. 2d, that sometimes they are detached from the kidneys, when they receive small branches from the emulgent arteries; and sometimes they are connected with the same; 3dly, that he never discovered in them any cavity, after maceration; 4thly, that whatever functions might be ascribed to these glands, he was satisfied of their being limited to the periods of fetal existence, and of the first years of life.

From what has been said, I think it must appear that the bodies in question, cannot serve through life the same sort of purpose as Dr. Rush has ascribed to the spleen; but that conformably to an ancient opinion, they do actually serve to lessen the quantity of urine in the fœtus; and also during the first year of life; that in adult life, their functions having ceased, the bodies themselves remain, as a part of the solids.

PRACTICAL REMARKS ON THE CURE OF JAUNDICE,

BY JOHN MACE, M. D.

*Frederica, Delaware, Jan. 18, 1813.*

GENTLEMEN,

**I** SEND you the following recipe for the cure of jaundice, which you will please to insert in the Medical Repository, if you think it merits sufficient attention. I keep the medicine in my shop under the title of *tinctura icterica*, or jaundice tincture. It is prepared in the following manner:

Take of Salt of tartar, one ounce,  
 Castile soap, } each half an ounce,  
 Gum Arabic, }  
 Spirits or brandy, one pint.

The ingredients should be frequently stirred with a stick or spatula, and shook well together, and after standing four or five days the medicine will be fit for use.

The dose is two thirds of a wine glass, mixed with one third of a wine glass of water, every morning, for three successive days, when it may be left off for two or three mornings, and taken again in the same way, if necessary, until the disease begins to disappear. In bad cases, it should be taken every morning till relief is procured.

The first effect produced by this medicine, is an abatement of the sensation of oppression and fulness about the breast and stomach. This abatement becomes more and more evident, till the disorder gives way, which circumstance is generally attended with a considerable degree of purging. In some few instances, when the medicine was first taken, a vomiting has been occasioned; in others a perspiration has soon ensued.

This tincture was recommended to me four or five years ago, by a gentleman who had been cured by it, after application to some of the most experienced physicians, and submitting to a mercurial course in vain. He took it nine mornings, in the manner specified, at the end of which time he informed me he was well.

Before I became acquainted with this prescription, I was frequently baffled in my attempts to cure jaundice, but since, I have not found any difficulty. The year before last, the complaint was remarkably prevalent in this village, and its vicinity, both among white and black people, and also at Milford. At the village of Milton, in the adjoining county, it was uncommonly violent, and I am credibly informed, that the fatal stage was attended with black vomiting. In consequence of being generally successful in the treatment of this disease, numerous applications were made to me for the jaundice tincture, and in no instance that came under my observation and inquiry, did it fail to produce the desired effect. In the course of the year, I think I must have cured one hundred patients. Indeed I have never known this remedy unsuccessful, when taken a sufficient length of time, and it is not tedious in its operation; a manifest alleviation of the disordered state of the stomach and the concomitant oppression being in a majority of cases, occasioned by the first or second dose; and in the commencement of the disease, three doses will often be sufficient to complete the cure. I generally direct a drink of cold water, immediately after each dose, in order to diminish the burning sensation produced by the medicine.

Upon what principle the tincture acts, in curing jaundice, I will not pretend to determine. Were I to say that it is a particular stimulus, suited to the degree of morbid excitement in this disease, that this stimulus acts first on the stomach, and then, by the power of sympathy, is communicated to the biliary system, in which way Dr. Saunders supposes bitters to cure the complaint; it would be taking for granted, what remains to be proved. The functions of the biliary organs are not so well understood as to authorise deductions of this kind. They do not appear to be altogether subject to the higher powers of "nervous energy and spasm and collapse and ex-



citement," nor do they yield to the more "fashionable fetters of stimuli and excitability." I remember that the ingenious and learned Dr. Barton remarked, in his valuable lectures on the *Materia Medica*, that there was too little attention paid to the fluids, in our late systems and theories of medicine.

The success of the jaundice tincture, the virtue of which appears to depend on its alkaline quality, will probably go very far to establish the truth of this remark. But I am not disposed to enter into a theoretical discussion upon the subject, and shall close this article, by sincerely wishing, that the medicine I have recommended may be as successful in the hands of others, as it has been in mine. It is under the impression, alone, of its being useful, that it is submitted to the public. I am, gentlemen, with much respect, yours sincerely.—&c.

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PAPERS ON THE LAST WINTER EPIDEMIC IN DIFFERENT PARTS OF THE UNITED STATES.

- I. *Extract of an Essay on the Bilious Epidemic Fever, prevailing in the state of New-York, &c.* By DR. CHRISTOPHER C. YATES.
- II. *An Account of the Epidemic Pneumonia, which prevailed among the soldiers at Greenbush, and the inhabitants of Albany, in the winter of 1812 and 1813.* By JAMES MANN, Hospital Surgeon, U. S. army.
- III. *Remarks on the Prevailing Epidemic.* By JOHN STEARNS, M. D. Read before the Medical Society of the State of New-York, and published at their request.
- IV. *An Account of the Epidemic pervading the Country, and affecting the inhabitants and soldiers, in a letter from DR. SILAS FULLER, Surgeon, 23d regt. U. S. infantry, to the Editors.*
- V. *Narrative of a case of Malignant Pneumonia, successfully treated.* By DRs. E. S. and C. C. BLACHLY.
- VI. *Description of a disease, which prevailed in the upper parts of Virginia, during the winters of 1812-13.* By ROBERT DUNBAR, M. D.

We have apprised our medical correspondents, at the commencement of this series, of our intention to investigate and establish all useful information respecting the subject of epidemical diseases, in order that they might more zealously comply with our request of their communications, on the occurrences, characters, and modes of treatment of the same. The memoirs or essays on the last winter's epidemic, at Albany, Buffalo, Plattsburg, and other places; which we thankfully acknowledge to have been favoured with, appear to treat of the same disease, although this is by some differently designated and subjected to an opposite mode of treatment. We conceive that in proportion to the extensive range of country, or district, that an epidemic pervades, and to the rapidity of its fatal course in the system, the disorder is diversified in its characteristic symptoms, and successively requires various remedies. This is remarkably exemplified by the account of the winter fever, in the upper parts of Virginia. We have, therefore, thought proper to embody all this mass of evidence and instructive document, declining any selection or preference on account of opinions or doctrines. It adds not a little value to this medical collection, to remark that it comes from eye-witness practitioners, equally anxious to serve the cause of humanity and of science. At any possible and future occurrence of the same violent disease, their observations and advice will assist their fellow-labourers, and from the diversity of opinion among them, there can arise no other inconvenience than that of exercising a more discriminating judgment, and more cautious applications, whereby they will obtain greater success in practice. Such of those papers as cannot be introduced in this number, shall be inserted in our next.

PAPER, No. I.

To S. SOUTHWICK, Esq.

DEAR SIR,

I have complied with your request to furnish you with some account of the disease at present prevailing in this

city, called by some a *typhus fever*, and which has proved mortal to many of our citizens. I am well aware of the incompleteness of this statement. It is short, but faithful, so far as my observations have enabled me to examine the disease.

The first case I saw, was in October last, in a young man about 20 years of age. He had resided all the summer at the Camp in Greenbush, where the disease then prevailed, and had proved mortal to many of the soldiers. He was seized with pains in his side, knees and shoulders, the common effects of a cold—his pulse was weak and very little quicker than in health—his eyes appeared to indicate an increased and inflammatory action in the system, which was contradicted by his pulse—this inflammatory appearance induced me to bleed him. I took about eight or ten ounces of blood; this relieved him for a few hours only. I gave him jalap and calomel, which operated slightly on his bowels—the continuance of pain in his side, induced me to lay a blister plaister on the part—this gave him little relief. I prescribed the usual fever powders, composed of nitre, calomel and tartarised antimony—gave him sweating draughts—his skin continued dry, but not preternaturally warm. Under this treatment the frequency of his pulse increased, and he grew delirious. I now had recourse to wine, camphor, laudanum and bark—he continued delirious and died on the seventh day.

Since the above, no case occurred in my practice till about the middle of November, when in the course of a few days I visited two young men—in these cases the pulse and other prominent symptoms which marked the first case, were the same. I did not venture to use the lancet—I prescribed an emetic; this brought away much bilious matter, and relieved the pains in general. I followed this with a dose of jalap and calomel, and thereby cleared the bowels well. After these evacuations my patients were easily disposed to sweat, which was encouraged by hot catnip or balm tea—medicine was now discontinued, and they recovered easily.

Since the last two cases, one or more occurred every few days, some slightly, others more severe. The patients now complained of pains in different parts of the



body—the heels, ancles, knees, hips, small of the back, shoulders, breast, side and head, a heavy and painful sensation in the eye-balls; they suffered under these pains at different times, and often at the same time.

The most distressing chills sometimes ushered in the disease. My patients told me the chills were different from any they ever felt before; they were peculiarly agonizing in some; and in the language of two, “they were like throwing cold water on their hearts.” The tongue at first always pale, and its secretions inactive. This paleness of the tongue continues in the worst stage—pulse in almost all these cases very little different in frequency from natural, but the sensation given to the finger by the artery, *peculiar* and *new* to me: it appeared that during the intermission of each pulsation, the vessel had completely emptied itself. The pulsations, though they appeared to distend the artery to its usual capacity, were weak and languid. In short, it exhibited every mark that would deter a prudent physician from bleeding.

In a majority of cases they complained of pain in the right side, and across the breast; with the last symptom, a slight but frequent cough was frequently attendant.

I have scarcely in any case derived benefit from blisters; small doses of laudanum, frequently administered, alleviated, or removed those pains.

I never ventured on laudanum (of which I seldom gave more than 100 drops in 24 hours) until after having freely evacuated the stomach and bowels; over the latter I kept a perfect command with gentle laxatives, which never failed of carrying off great quantities of green coloured and sometimes very fetid stools.

This plan in the first stage of the complaint seldom failed of entirely removing the most distressing symptoms—the appetite returned, and food completed the cure.

In the second stage, the pulse became quick,\* feeble, and often hardly perceptible. This generally took place on the third day.

\* Some patients of full and strong habits, had a quick but weak pulse from the first attack.

If no favourable crisis had taken place at this time, the pain in the head or side would return, with sometimes a burning sensation at the stomach, attended with more or less nausea. Now the breast suffered the most distressing sensations from an incapacity to fill the lungs by inspiration—this was not prevented by acute pain, but a deadly suffocating pressure on the air vessels. Notwithstanding the debilitated state of my patient, I again repeated the emetic combined with calomel; the consequence was a dark green bilious emission from the stomach, and an evacuation of similar matter in vast quantities by stool. This never failed of restoring them to comfortable rest, but in the course of a few hours were again threatened with their former distress. This was corrected by small and often repeated doses of jalap and soluble tartar, which kept the bowels clear from the morbid matter as fast as it was poured into them, which in some cases was immense.

While pursuing the evacuating plan as above described, in this stage of the complaint, I found it necessary to keep the patient from sinking, to administer laudanum with the sweet spirits of nitre, or vitriolic ether in small doses every two hours; with these medicines I found no difficulty in supporting them under the severest evacuations.

About the fifth or sixth day, the discharges became more natural, the appetite returned, and health was speedily restored by food.

The foregoing plan of cure has been pursued by me with little variation; and every case of this misnamed *terrible fever*, which has come under my observation, (except the patient who died in October,) has yielded to it; and only one solitary case, has been confined to the room beyond the ninth day. The last excepted case was an old man,\* who, I thought, for some hours, irrecoverably gone; the arteries, at the wrist, ceased

\* This patient has since died; he had regained his appetite, and was gradually gaining strength—pulse good—*no fever*. While sitting by a very hot stove, grew faint and languid, with some assistance walked to his bed, fell instantly into a state of perfect stupor, with his jaws firmly locked. I could not get medicine down—he continued in this situation 48 hours, and died.

beating for nearly half an hour. Large doses of laudanum and ether restored him. When a little revived, I administered a powerful cathartic, and ordered injections, which brought away large quantities of morbid, bilious matter. This added to his relief, and he is now mending as fast as can be expected, from the low state he was in.

My friend, Dr. B——, with whom I have frequently communicated on the nature of this disease, accords with me in the general treatment of it, and am happy that I can confirm its propriety by the equal success he has met with, having lost only one marked case, to which he was not called till some days after another physician had abandoned the patient.

Were I disposed to theorize on the *proximate* cause and effect of this disease, I should say, that the liver is the reservoir from which this noxious matter is diffused through the system; its deleterious particles entering the blood-vessels, contaminate that fluid, tend to destroy its vital principle, and of consequence, lessen the energy of the arterial system. This appears to be evinced more particularly in the most alarming stage of the disease, when those symptoms appear, that have been called *Peripneumonic*, when the breathing is short and suffocating, and the face becomes livid; sometimes the vessels of the cheeks become turgid, and of a dark purple colour; denoting a want of *oxygen*, that *vital* principle of the blood, so necessary for the support of life. Hence, the universal languor, the almost instantaneous depression of strength and spirits, the want of nervous energy, the perishing action of the extreme vessels, producing the most unusual and distressing chills, and the almost insensibility to external heat, when first attacked. All these tend, in some measure, to warrant a suspicion of these facts. But this is mere speculation; all we know is, that the morbid matter exists, and is creating from time to time, that the effects are as I have partly described them, and that a speedy removal of this secretion is the only way to terminate the disease favourably.

The ill success attending the treatment of this disease is to be accounted for in two ways. First, by bleeding, and second, by administering great quantities of lauda-



num, brandy, wine or bark ; either of these stimulants even in a moderate degree, must prove fatal, unless the stomach and bowels are kept free from morbid secretions, by emetics and purgatives.

If you intend to publish the above observations, permit me to add, that I have not the vanity to suppose, that they will enlighten any of my professional brethren in this city. Their experience must have been sufficient to have taught them the most eligible mode of treating the complaint. I have made them to gratify your request, and if they should prove serviceable to any physician, in whose neighbourhood this disease may hereafter make its appearance as a stranger, it will be to me a pleasing and happy reflection.

Yours, &c.

*Albany 26th Jan. 1813.*

*The pamphlet of DR. YATES contains additional and interesting remarks on this subject, and strictures on DR. MANN, and DR. STEARNS's Accounts, to which we beg leave to refer our readers subjoining only the following extract, (p. 26 & seq.)*

I HAVE on a former occasion said that I was not prepared to name this disease, having found in no author that I had read, a just description of it.

As diseases are generally named from some prominent symptom that characterizes them, I have not hesitated to entitle this a bilious fever ; and from its being epidemic, the "BILIOUS EPIDEMIC FEVER."

It has been contended that this fever has been faithfully described by Sauvages, Sydenham, Huxham and other ancient writers, under the several names of pneumonia, peripneumonia notha, winter fever, peripneumonia typhoides, &c. That the above diseases, as described by the different authors, have more or less symptoms appertaining to the prevailing fever, I do not question. It is a fact well known to physicians, that almost all fevers have more or less a similitude of symptoms.

I have said that the symptoms of this disease partook

of the bilious, gaol, and malignant fever, but more particularly of the latter ; and I do not hazard a contradiction when I state that the symptoms of malignant fever are more strongly characterized in this fever than the symptoms of either pneumonia, peripneumonia notha, or peripneumonia typhoides ; and were it necessary, I could prove that these several forms of diseases had some peculiar and well defined symptoms, which have never occurred in any case of this fever that has come under the observation of our physicians, and are totally inconsistent with its nature and effect.

That the affection of the lungs in this disease is not primary, but sympathetic, appears to me as clear as the sun at noon-day. Whenever the biliary secretions and excretions are removed by an emetic or cathartic, the oppression on the lungs immediately yields or vanishes. I have found this affection perfectly under the command of these remedies, and I believe it does in no case exist when there is not an accumulation of these secretions. In many marked cases of this fever that symptom does not exist at all.

In bilious fevers of a malignant tendency, the lungs are not unfrequently affected in this manner.

Dr. Jackson notices it in his treatise on the fevers of Jamaica. He says, "*bilious fevers* occur in Jamaica, which are distinguished by local affections, or increased determination to particular parts in a degree so remarkable, as to *personate very exactly a peripneumony*, a hepatitis, or inflammation of the bowels ; the accompanying fever being at the same time so slight, as scarcely to be considered a primary affection."

Dr. Rush remarked those pneumonic symptoms in the *bilious* yellow fever in 1793 ; he mentions that many were affected with them, and some *appeared* to die of sudden effusions of blood or serum in the lungs.

*Difficulty of breathing* is mentioned by Hippocrates, Galen, Van Swieten, &c. as well as modern writers, as accompanying *bilious*, malignant, or putrid fevers.

The great affinity this disease has to the malignant fevers of ancient and modern authors, will be seen by the following description.

Huxham says, a severe fixed pain is felt in one or both

eye-brows. The eyes always appear very full, heavy, yellowish, and are often a little inflamed. The countenance more dead coloured than usual. The prostration of spirits, weakness and faintness are very often surprisingly great and sudden. The respiration is most commonly laborious.

Few or none of these fevers are without a sort of *lumbago*, or pain in the back and loins ; always a universal weariness or soreness is felt, and often much pain in the limbs. The stools, especially near the state, or in the decline of the fever, are for the most part intolerably fetid, green, livid, or black, &c.

Grant describes malignant fevers as coming with chilliness, succeeded by heat, quickness of pulse, sickness of the stomach, pain in the head and loins, restlessness, thirst and anxiety ; but they have one symptom peculiar to themselves, a dejection of spirits and failure of strength far beyond what might be expected from the violence of the other symptoms, and short duration of the fever when not attended with malignity. This symptom, however, frequently arises from plethora, or turgid matter in the stomach and bowels.

Brookes, in treating of those fevers, says the ancients called them continued, quotidian, serous fevers ; that at the beginning of this disease, the face of the patient has a morbid aspect, and he is out of order three or four days before he takes to his bed. He complains of a spontaneous weariness, a grievous pain of his body and joints, as if his bones were bruised or broken ; his strength is languid, his appetite is lost, he has a slight fainting fit, a cardialgic nausea, a pain in the head, an unquiet sleep, with costiveness. In the evening, there is a coldness and shivering, followed by heat, the symptoms increase—there is a great loss of strength. The pain in the head grows worse, with a giddiness and inquietude. Some have a violent pain in the back, others in the side, the pulse contracted, quick and weak, anxiety about the præcordia, and the *breathing difficult*.

Wilson describes malignant fever as coming with a troublesome head-ach, acute pain in the back, loins and extremities, which often resembles a rheumatic affection ; a distressing sense of weariness, much thirst and



nausea, sometimes attended with a burning pain of the stomach, more frequently by vomiting, vertigo, dimness of sight and numbness of the extremities.\*

These authorities have been introduced not from an intention to support what I had formerly said on the subject, but merely to shew that the prevailing fever has a stronger similitude to the bilious, malignant, or putrid fever of authors, than to either the determined or mixed pneumonic affections, and wants less strong characteristics to make it the former than the latter.

The method of cure also adopted for the former complaint, with hardly an exception, comports with the most eligible mode pursued in the treatment of this complaint, while pneumonic affections of every description are treated with more or less exceptions to this mode; or rather the mode of cure adopted for pneumonic fevers is exceptionable in this fever.

PAPER, No. II.

*James Mann, Esq. Hospital Surgeon to the Army, having favoured the Editors with an account of the diseases among the troops, of which they will take notice hereafter, has introduced the subject of the Epidemic in the following words:*

THE most prominent disorder, while the army was at Plattsburg and on the lines, was the measles. It was stated, that one third of the soldiers was attacked with the disease. It predisposed those who had it, in conjunction with exciting causes, to induce a most formidable disease, under the form of pneumonia. This form, with a catarrhal affection, is at this time (February, 1813,) universal among the men; there are but few who have not more or less cough. This epidemic attacks under the form of both asthenic and sthenic diathesis; while these varieties mostly depend on prior habits. In many of the first cases at Burlington, (where for four weeks I was a spectator of its ravages,) the disease proved fatal in a few days, in some instances within twenty-four hours.

\* This symptom I should have mentioned as occurring sometimes in the prevailing fever.

The following are the most prominent features of the disease, under its most deadly form. Heat of the body below the standard of health, extremities cold, pulse contracted and hard, sometimes weak and soft, respiration very laborious, not apparently so much from sharp pains through the sides and breast, as from a sense of suffocation. The patient, when asked, says, that he does not feel much pain, but a weight upon the chest, an oppression arising from an inability to inhale the air, a sensation, one would imagine, similar to that which might be produced by breathing atmospheric air deprived of its oxygen. This suffocation, accompanied with a small pulse and general coldness, may perhaps be accounted for, by some condition of the lungs, which renders this organ incapable of absorbing through its membranes, in due quantity, the vital principle of the atmospheric air. There is, in some instances, a copious expectoration of glairy, viscid phlegm, sometimes uniformly coloured with blood, at other times only streaked. The above form of the disease is like the *pneumonia notha* of the ancients, and it is not unworthy of notice, that its attacks are made upon those who are in habits of intemperate potations of spirituous liquors.

The appearances, upon dissections after death, are inflammations upon the lungs, and congestions, in some instances, adhesions of that organ to the circumjacent parts, its surface covered with a yellowish, gelatinous, semiputrid extravasation; its spongy texture is lost and assumes, in some measure, the firm, compact state of the liver. The physician, in the above case, hesitates, and cautiously employs his lancet. Here, however, it may be necessary to state, that there are two conditions of the disease somewhat similar as regards the pulse, but which are essentially different. In one, with its apparent weakness there is a hardness; we call it a contracted hard pulse; it should be distinguished from the other, which is a weak, soft pulse. In both cases it is small. The first attended with laborious and suffocated respiration, with pains through the chest, requires a cautious use of the lancet.

In the second state, and where there is a weak, soft pulse, bleeding may be injurious. With these contracted hard



pulses, cold extremities, &c. various dissections have demonstrated the highest state of inflammation. By what means can formidable congestions of the lungs, which assumed the appearance of liver, be removed, except by bleeding? Without the employment of the lancet other remedies will often prove ineffectual. The quantity taken at first should be small. If any relief is procured, the diameter of the artery becomes greater, which indicates a repetition of bleeding. One additional observation with respect to bleeding, will be made, that this operation should not generally be employed in the cold stage of this form of the epidemic, even where, in its subsequent warmer stage, (the heat of the body being at no time great) it might be found necessary to perform the operation. The above cases most generally terminated fatally, under every method of treatment; the number of these however were few, compared with the multitude seized. A fortunate administration of stimulants, in a solitary instance only, within my knowledge, proved successful, while their indiscriminate use induced a most *deadly* practice. Such was introduced into the army for a short period, by a citizen, who was called to attend the sick, when the physicians of the army were overburthened with numbers. Brandy, wine and soups were the remedies principally depended upon by him in every form of these pneumonic affections. Prior to the administration of the above potent stimulants, he employed emetics, cathartics and blisters, the use of the lancet he absolutely forbade, under every form of the disease. It has been already observed, that cases occurred, where the physicians of the army hesitated and doubted the propriety of bleeding. The cases under this type were not one in twenty. It is worthy of notice, that in two cases which came under my observation, where blood-letting was cautiously employed, the accidental opening of the orifice during a restless night, produced so much relief, (even a removal of every alarming symptom) as led to a persuasion, that, in some instances, where the disease had proved fatal, bleeding, from too much timidity, had been wholly neglected, and in others employed with too great caution. In one case, the patient apparently sinking under the above form of disease, seemed to be res-



cued from the grave, by six grains of opium, administered in divided doses of one grain every two hours, and a teaspoonfull of ether every half hour. The same treatment in other similar cases was not attended with the like success.

In all cases of the above form of disease, blisters are employed upon the sides, breast and back ; in some they seemed to be of use. Cathartics of calomel and jalap, and emetics are administered. Where the body is torpid and cold, sinapisms, warm and heated applications to various parts, particularly to the extremities, are necessary. During the forming state of the disease, artificial sweating is useful ; after the fever is established, sweats induced by forced means proved injurious. In the most violent forms of this disease, such as above described, it is proper to notice, that the stimulant, diaphoretic, and depleting method of treatment are but seldom accompanied with success. Its progress is rapid, and assumes, in a few hours, the strongly marked symptoms of approaching dissolution ; it may be added, that even where suffocation and a rattling supervene, and the heart and arteries cease to perform their offices, that the muscular strength of the patient is not remarkably impaired. Several have been seen to walk the room a few hours before death.

Much the largest number seized with this extensive epidemic, are under a *sthenic* form, with strongly marked symptoms of inflammation, and require the depleting and antiphlogistic method of treatment in its full extent. Stimulants here, evidently hasten the patient into the first described, fatal state of the disease. At the first attack, with strong arterial action, pains through the sides and breast, much heat, difficult respiration, little or no expectoration, and this tinged frequently with blood, bleeding is employed, from one to two pints. It is often necessary to repeat the operation. In a few instances two quarts have been drawn from the arm of the patient in the course of the fever, with good effect. A cathartic of jalap and calomel, or calomel *per se*, is then administered. This it is found necessary to repeat in some cases ; but as the disease is frequently accompanied with diarrhoea, drastic purges are employed with caution.

The diarrhœa, at times, is so profuse, that cathartics are not indicated, while it is necessary to check these alvine discharges by opiates.

The diarrhœa, which accompanies this fever is not critical; it is not checked as the fever abates, except by opium, remaining obstinate for a long time, even after the return of the appetite. This perverse diarrhœa, according to the report of Dr. Lovell, of the 9th regt. readily yielded to lime-water. After bleeding and cathartics, under this form of pneumonia, calomel in small doses, combined with opium, is administered with benefit; and where a gentle spitting is produced by its employment, pain in the breast is mitigated, laborious respiration subsides, copious and laudable expectoration, and moist skin supervene. To promote these last, vin. antimon. and elix. paregor. prove an excellent medicine. When the antimony occasions too frequent evacuations by the bowels, small and repeated doses of pulv. Doveri are substituted. When the inflammatory state of the disease is in a measure removed, more especially, where nausea and anorexia exist, emetics of ipecac. are advantageously administered. Blisters in the course of the disease, are indispensable to remove stitches in the breast and sides, after blood-letting is carried to its proper extent; believing with others, that there is a blistering, as well as a bleeding, and emetic period in fevers, the bounds of which being ascertained, should never be intruded upon by each other. As this disease has not been confined to the soldiers of the army, but has made its attacks and ravages in various places, about the same time, over a very extensive tract of country, it may be fairly inferred, that its spread far and wide is not the consequence of its contagious nature. It may be viewed as an epidemic produced by some latent, remote cause, an unknown state of atmosphere, and like all extensive epidemics, is most severe and fatal to such as are unavoidably, and in many instances, imprudently exposed to various additional exciting causes. Those who have attended to the progress of epidemics, may have observed, that among thousands who have been subjected to their influence, a few have been treated with severity by the disease, and some have fallen victims to its rage;

while the deaths which have occurred, might be imputed, much less to the nature of the epidemic, than to the various exciting causes which co-operated to produce its mortality. The first, perhaps, in all cases, cannot be avoided; while the exciting causes, giving to the disease a severe or fatal form, is within the ability of man to obviate.

Among the various exciting causes productive of a severe disease, under the present epidemic, is an intemperate use of ardent spirits. To this may be added, as exciting causes, every species of irregularity which induces within the system an unequal excitement. These are, gormandizing large quantities of animal food, long exposure to a cold state of atmosphere; sudden transitions from heat to cold, and vice versa, great fatigues, extraordinary mental exertions, excessive watching, a want of exercise sufficient to give tone to the muscular fibres of the body, and promote the general circulation of the fluids. Many of the above enumerated exciting causes, may be avoided. It is a fact, well known among the physicians of the army, that the disease has been fatal mostly among the men who are in habits of great intemperance.

It is a vulgar and mistaken opinion, that the use of spirits secures the body from the attacks of disease, and fortifies it against cold, or its effects. So far from effecting either of these, ardent spirits aggravate the injurious consequences of cold, and frequently predispose the body for the reception of a disease, under its most severe and perhaps fatal form.

In a few instances, coughs are obstinate, after there is a resolution of the fever. These are usually removed by a continuance of the vin. antimon. and elix. paregor. equal parts of each; a teaspoonfull of this mixture is given every four hours, or as often as the urgency of the cough requires. Mucilages are also administered, sweetened with honey or liquorice. It is frequently necessary to give one or two grains of opium at night, to procure sleep.

The jaundice is a very common complaint during the convalescent state of this fever. The skin and tunica adnata of the eyes are yellow. Even where calomel had



been freely used during the course of the fever, its continuance, in small doses, is necessary to remove this complaint. Repeated emetics are given also with much advantage. Obstructions of the ductus communis choledochus, are the cause of this regurgitation of the bile, which exhibits itself throughout the lymphatic system of vessels. This is one evidence, that during the disease there is a want of bile in the intestinal tube. The yellowness in the skin and eyes, does not appear, until the liver, with the other secretory organs of the system, assumes its proper office; when either in consequence of concretions, or inspissations in the common duct, the bile is refused a passage to the duodenum. It hence accumulates in its proper reservoir, from thence is received into the circulation, and conveyed throughout the system, to the extremities of the blood-vessels, whence it is absorbed into the lymphatics. This disease readily yielded to the remedies commonly used in these complaints.

The order, in which the several diseases of the army made their appearance, is as follows:—Dysentery and fevers, and diarrhœa, in the months of July, August and September; diarrhœa and pneumonia, diarrhœa and rheumatism, and measles, in the month of October; measles and diarrhœa in November; pneumonia notha and diarrhœa, and severe pneumonia in December, 1812, and January, 1813, which last is the prevailing epidemic.

From several statements made by physicians of respectability among the citizens, it is very evident, that the diseases in the army, have generally appeared under higher states of inflammation than among citizens. This has been already accounted for, whether satisfactorily or not, the reader may judge for himself.\*

\* That an epidemic should have assumed an appearance somewhat different among citizens, in a city with an extensive population, from that in camp, produced by the same remote cause, may easily be accounted for, from the circumstance, that epidemics generally prevail most among that class of people, of every age and constitution, whose situation does not admit of all the necessaries and comforts of life. Cold lodgings, coarse and spare diet, and dirty houses, will predispose the body to a form of disease somewhat different from that which appears among robust men, fed with a full ration of animal food, and an abundance of ardent spirits.

No evidence of this fact more conclusive can be adduced, than the appearances of the state of the viscera after death. The daily employment of bleeding the men in the army, attacked with the above described pneumonic affections, and the attendant success on the practice, warrant a continuance of it. The want of success in the cure of the disease among citizens, in cases where bleeding has been omitted, is no proof that the lancet should not, in some cases be employed.

The unavoidable transitions of weather, to which soldiers are exposed, and the fatal diseases which are a consequence, might be an inducement to government, as they would wish to guard the health of the men, and preserve their services in the field, to furnish them annually with a pair of woollen shirts. A single garment of wool next to the skin, would secure them from colds more effectually, than three garments worn over linen. Woollen is not a good conductor of heat; consequently under every circumstance of cold and wet, it retains the natural warmth of the body. The additional expense would be small; but the advantages to be derived from this improvement, to government would be great, not only in the saving of bounties paid to necessary recruits, to supply the loss of those who die by sickness; but more especially in preventing the wounds, which the feeling hearts of friends and connexions too frequently endure.

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PAPER, No. III.

ALBANY, FEBRUARY, 1813.

Although a few sporadic cases of the epidemic, which now prevails in this city, and the country adjacent, made their appearance in the fall; it was not till the middle of December last that it began to be much noticed. From this time, it gradually increased to the present period.

The symptoms which characterize this disease, are,

1st. Cold chills, which in some instances, continue 24 hours, and are sometimes succeeded by a temperature, unequally distributed over the surface. While the face and trunk of the body are of a heat higher than natural, and considerably flushed, the extremities are cold. In some instances the chills are but slight; the violence and danger of the disease are generally proportioned to the length of the chill.

2d. Great and general prostration of strength, frequently accompanied with fainting.

3d. Extreme pain in the head, thorax, and sometimes in the extremities, accompanied with dyspnœa and hurried respiration; when the pain assails the head with severity, it generally terminates in delirium. The pain is sometimes severe in the back part of the head and neck, but generally affects the forehead, producing an extreme soreness in one, sometimes in both eyes. When the pains are not violent, the patients complain of a vertigo, and a dull, heavy, sensation in the head, with an oppression at the stomach, nausea, and sometimes vomiting.

4th. The tongue is generally, at first, dry and covered with a white fur, which, as the disease advances, is in some instances, converted to a dark brown.

5th. In violent cases, the face appears tumid and livid; the eyes are remarkably protruded, exhibiting a yellow aspect:

6th. The urine generally flows in unusually large quantities and is sometimes very high coloured.

7th. The pulse in the incipient stage is small, weak, tremulous, and in some instances suspended; as the cold stage subsides, the pulse rises, but seldom to a degree of natural strength or fulness—it appears to labour under a violent oppression, is often irregular and generally slower than natural.

8th. The stomach is generally loaded with a vast quantity of gelatinous slime, which in tenacity resembles the white of an egg.

9th. When a diarrhœa does not usher in the complaint, the bowels are torpid and extremely costive. Ordinary cathartics seldom produce their customary effects.

10th. A cough, with an expectoration of yellow mucus tinged with blood, in some instances commences with



the disease ; as it advances clear blood is often discharged from the lungs and nose.

11th. A viscid sweat is generally thrown out upon the surface spontaneously, which is never critical, and if copious, is always injurious.

This viscous fluid is not confined to the surface. The saliva, gastric juice, and indeed every secreted fluid participates of the same disposition and evinces a morbid affection of the whole secerning system.

The preceding phenomena indicate the existence of a disease entirely unknown in this section of our country. It appears to participate of two distinct and opposite natures—*pneumonia* and *typhus*. A peculiar constitution of the atmosphere appears to predispose the system to a typhus fever, under circumstances peculiarly favourable to the production of pneumonia ; hence that state of disease is induced, which may be denominated *Typhoid Peripneumony*, or *Pneumonia Typhoides* ; a disease, which in some respects, strongly indicates the free use of the lancet, and in others the liberal administration of stimulants. Hence originates a contrariety of treatment, which experience has proved to be very injurious to the patient ; while some bleed copiously, others resort to the most powerful stimulants. When the prominent and opposite symptoms of this disease are nearly balanced, prudence would dictate the use of neither of these classes of remedies ; while depletion increases the symptoms of typhus, powerful stimulants produce delirium and aggravate all the fatal symptoms of pneumonia. It is only when one of these classes of symptoms clearly and distinctly predominate, that either of these remedies are ever proper. Indiscriminately to condemn both in all states of the disease, therefore, evinces an imperfect knowledge of the complaint, and is the height of absurdity and presumption.

This is the same disease that prevailed in some parts of this and the eastern states, during the last winter, and is exclusively confined to this season of the year. It prevailed in England in the year 1685, and was faithfully described by Dr. Sydenham, under the name of the winter fever, which in a subsequent treatise, he denominated the new fever. In attempting to account for

the origin of the fever, he traces its causes to the plague, which had preceded it a few years, and of which he considers this as completely "depuratory." Since his time we do not find it described as prevailing in any country till the year 1811.

"Doctor Macbride considers it as a mixed fever, and terms it *febris hyemalis*. Sauvages, a species of Synochus, and names it *synochus hyemalis*, though he thinks it merits more the denomination of *catarrhalis*. Both these authors have taken their account from Sydenham. Dr. Cullen classes it as a variety of the Synocha or inflammatory fever. Huxham in his observations *de aëre et morbis epidemicis*, describes a fever, which he says nearly resembles this: and Dr. Swan thinks the mild catarrhal fever of Hoffman, which, that author so accurately describes, and treats with so much judgment, bears to this a great similitude. WALLIS.

After premising this brief sketch of the symptoms and history of this disease, I shall proceed to examine the remedies which have been prescribed.

1st. *Bleeding*. This, as I before observed, is extremely hazardous, unless symptoms of pneumonia or synocha decidedly predominate, and even in this case it should be used with extreme caution, and in small quantities, otherwise the typhous tendency of the disease prevails, and the patient sinks and dies. I have seen but one case in which it was indicated, and in which I took but four ounces.

Letters from eminent practitioners in some of the counties where it prevailed the last year, inform me, it was occasionally practised there with success. This was the practice of Sydenham, and is used by many, the present season.

2. *The warm bath*. In this disease, the blood recedes from the surface and extremities, accumulates in the large vessels, and completely oppresses the action of the heart and arteries. An universal coldness and frequent chills, consequently pervade the whole surface of the body, till the torpor of the extreme vessels is overcome.

The first indication of cure is therefore to restore action to the surface and extremities, and thence to preserve

that equilibrium of the circulation, which has been entirely destroyed.

This indication is successfully answered by the total immersion of the body in warm water, in the incipient stage of the cold chill. If the warm bath is applied at this early period, the disorder is effectually subdued in 48 hours ; but if delayed till the cold stage is considerably advanced, its operation is less efficacious.

Immersing the extremities in warm water and general fomentations to the surface, may be substituted, when the warm bath cannot be procured. This should be continued till the chills have entirely subsided ; it should then be discontinued, otherwise the copious sweats thereby induced, will debilitate and sink the patient, or accumulate the morbid heat of the system, and thence induce delirium. Warm diaphoretic teas should accompany the use of the warm bath.

3d. *Emetics.* When the head is affected with pain or a vertigo, or a dull heavy sensation accompanied with an oppression at the stomach, or a nausea and vomiting, an emetic is indispensably necessary. It invariably ejects a quantity of cold, viscous slime, which resembles in tenacity and colour the white of an egg. If this fluid is not evacuated, a torpor of the stomach and bowels ensues, which enhances the danger of the disease in its progress, and essentially impedes the cure.

When the emetic has been given early in the disease, and its operation proves effectual, the preceding symptoms readily yield ; but if they continue obstinate the emetic may be repeated, and succeeded by

4th. *Cathartics.* Calomel, or calomel and jalap, if given early in the disease, and repeated as the symptoms may require, soon obviates the obstinate costiveness of the bowels, and restores their natural tone, by evacuating their extremely offensive and debilitating contents.

5th. *Diaphoretics.* Although profuse and long continued sweats are evidently injurious, as they induce debility without in the least promoting a crisis, yet a naturally soft and moist state of the skin is always accompanied with a mitigation of the pain, and ought ever to be encouraged. To promote this object, I make a liberal use of snake-root, sage, boneset, or hemlock tea, and



every four hours, or oftener if necessary, give a powder very similar to Dover's; to this powder I sometimes add calomel, if the pneumonic symptoms do not readily yield.

6th. *Epispastics.* When the pains in the thorax are violent, and respiration difficult, and do not yield to spirituous fomentations, I generally apply a large blister to the breast or side. In most cases the fomentations will succeed alone, and are more efficacious than blisters.

7th. *Demulcents.* Occasionally combined with opiates, are necessary to alleviate the cough and pains of the breast.

This course of treatment will generally promote a crisis in five days, and sometimes sooner; but should the disease be protracted to the typhous stage, the remedies usually prescribed in that type of fever then become necessary.

*(To be continued in our next.)*

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## REVIEW.

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AN ESSAY ON THE ORGANIC DISEASES AND LESIONS OF THE HEART AND GREAT VESSELS, *from the Clinical Lectures of J. N. CORVISART, first Physician of their Imperial Majesties, &c. &c. Published under his inspection, by C. E. HOREAU. Translated from the French, with Notes, by JACOB GATES, M. M. S. S. 344 pages, 8vo. Boston, 1812.*

—Hæret lateri Lethalis Arundo.

VIRG.

THIS is one among the few recent works which we cannot read without regretting their late appearance, after many ages of error and conjectural theories, on the general causes of human diseases. Indeed, were we sufficiently acquainted with the natural imperfections or accidental injuries of the principal organs of circulation, respiration and of nutrition; supposing also that our physiology would embrace their characteristic signs and diagnoses, with those of defects in the constituent parts of fluids and secretions, there would be no difficulty in assigning each effect to its cause. The knowledge of human diseases would be accurate and extensive in proportion to that of the human frame and organic laws.—If from that analytical plan of observation we could direct our steps not precisely to a metaphysical system of vitality, but to *vitality* itself, as the result of perfect organization, and also to its degree of reaction against any destructive agency, we should find that these, constitute various phenomena, in the different systems of the human body, and that they always proceed from the same reacting power, or *irritability*; whether they appear in the shape of spasms, convulsions, tremor, pain or burning fever.—All these we could define, enumerate and easily class with organic lesions, to constitute diseases, in their natural order and arrangement, without much classical erudition or mysterious hypothesis. What then would remain for old or modern theories to embrace and to con-

found? and of what use would be the *Punctum Saliens* of Van Helmont, the Humoral System of Boerrhave, the Spasms of Cullen, the Graduated Tables of direct or indirect Debility by Brown, &c.

At the discovery of one truth many errors and prejudices must be exploded, and the different branches of the science it creates anew, must be trimmed like those of an engrafted tree, which is going to assume a new life and a different shape. Nosology, therefore, next to physiology, must admit new elements, in lieu of arbitrary and erroneous principles. Nosologists have vied with each other to construct what they differently thought to be the most natural classification of diseases. No doubt they wished to assist medical inquiry, to fix modes of practice, and to connect each of them with physiological doctrines. Their works, we confess, displayed so much scientific ingenuity, as to make us regret that it should not have been better employed; for, they promiscuously established their classes of diseases on external appearances, or on the invisible agency of undefined causes. Others arbitrarily fixed their classes on incidental and symptomatic characters; their more modern successors, inverted, or rather confounded still more the former arrangements. It would be quite irrelevant to our present task to exhibit the erroneous data of eight or ten known systems of nosology, besides those of a few less eminent authors; but in relation to the work now under our consideration, we will only observe, that lesions or diseases of the heart, mostly constitute *asthma*, *dyspnoea*, and *hydrothorax*, *hepatitis*, *palpitations*, &c. while by some strange assimilations, these are referred by SAUVAGES to *cystides* and *ankelations*; and by CULLEN they must appertain to *nevroses*!

The truest nosology will be that which is established upon lesions or imperfections of each organ, and distinguished according to the impaired state of *vitality*, with which they must be severally endowed. To come at the first, we must, as in physical and mathematical sciences, have recourse to *analysis*; and let the scalpel be our guide. Let us assemble facts, and consult observation. In the same way we shall be enabled to ascertain the evolutions of the vital principle in each organ, and



why should this mystery be more difficult to reveal than the pressure or weight of an atmospheric column of air, experimentally shown by the barometric skill of Toricelli and Pascal. Hence each disease will be traced to a cause, either in *organic lesion* or *organic vitality*; never then, shall nosology, like an ignis fatuus, deceptively draw us, and direct our steps towards the miry or dangerous quagmire, from which it is emitted in darkness.

Great praise is due to the philosophers and physiologists, whose writings attest how deeply impressed they were with the principles here imperfectly developed. Some of them were carried away from those principles, by the errors and prejudices of their time, but many more among the moderns have experimentally guided us to *analytical physiology*. We must then adorn our pages with the names of Morgagny, Harvey, Haller, Baillie, Bichat, Bayle and CORVISART.

It was a work similar to that of the latter, which we offered to the notice of our readers, in the first number of this volume, a well conducted inquiry on the nature and various species of consumption, solely derived from the inspection of 900 bodies, and from the symptoms, during life, of 52 of them. Corvisart, it appears, has adopted the same method of proceeding in the discovery of organic lesions of the heart. He has identified them all by cadaveric researches, after having enabled himself to compare them with the symptoms during life. The five classes stated by the professor, are arranged in the order of analysis. The first treats of the diseases of the membranous covering of the heart, the *pericardium*. This, like the pleura, and meninges, is subject to topical inflammations, of acute or chronic character. Sometimes it adheres to the heart, which it oppresses contrary to the intentions of nature, that has plunged this strong and unceasingly moving viscus in about six or eight ounces of a light and pure fluid. At other times, this covering morbidly secretes a thick mucus, which it deposits on the surface of the heart, like flakes of spurious membranes. In fine it happens that this pouch may fill up with many pounds of a watery or thick fluid, and be much distended, to the great injury of the heart, thus mechanically counteracted by a surrounding pressure. A detailed ac-

count of all these external lesions, composes the first class; to which the author adds, as an appendix, a rare dissertation on the paracentesis of the hydro-pericardium.

II. The second class embraces, under different heads and definitions, that species of alteration, which relates to the dilatations of the cavities of the heart, or the auricles and ventricles. He designates them by the name of *aneurism*, from which, we would rather dissent, since there are diseases under that head, which by no means correspond to the generic definition, nature and progress of aneurism. This is *active* or *passive*. The first means the enlargement of a cavity with the thickening of its parietes, while the other indicates the attenuation of the same. Either are afterwards to be considered as affecting the whole of the cavities, or one only of the ventricles and auricles.

The mechanical causes of such a singular but fatal alteration, are the subject of interesting inquiries; for, excess or diminution of power, or some preternatural reaction, must have concurred to its existence, as certainly as the aneurism of the heart necessarily breaks the all important and proportionate connexion which it should keep with the whole arterial system. The appendix to this class comprehends other highly interesting subjects; whether or not the sphacelus of the extremities of the body and apoplexy are the natural results of the aneurism of the heart? Here, also, we have instructive accounts of the ossification of the heart, and of the degeneracy of its muscular substance into fat.

III. In the third class Corvisart arranges all those alterations which affect the fibrous and tendinous tissue of the heart. He means indurations or ossifications constricting the orifices of the cavities, and also cartilages formed in their valves. He has seen obstructing excrescences and vegetations on the valves and textures.

IV. The fourth class with its appendix, is miscellaneous, and abundant in remarkable diseases and lesions. Such are the carditis, the rupture of the cavities and pillars, various kinds of tumours in the heart; its supuration, ulcers, gangrene, perforations, and other astonishing effects.

V. The last class relates solely to the aneurism of the aorta. The author terminates his rich display of anatomical structure, and physiological observations, by corollaries on the causes, signs, progress, prognosis and treatment of diseases and lesions of the heart, with a minute account of clinical methods, which liberally satisfy our expectations for instruction and practical utility.

Were we to dwell on the merit of this performance, we should not only notice the novel and valuable stock of facts which it contains, but all the mysteries he has revealed, with those ancient and accredited errors in medicine, respecting *anomalous* affections, which he has explained and referred to their true cause.

He has discovered and marked new paths, to guide our judgment in obscure and complicated diseases. In tracing the torrents of blood which circulate through our body, Corvisart has not neglected to compare the respective agency of a propelling power and reacting forces, better to illustrate the causes of morbid affections, the seat of which is sometimes remote from the heart. From his exposition of invariable laws in the human body, combined with the physical properties of matter, we are left instructed and enabled to judge for ourselves, in similar or different cases of disease. Thus, with his pages we can well ascertain, how partial obstruction of the vascular system may produce a disproportionate influx of blood in the lungs, and constitute a fatal peripneumony; how from the same cause, the blood regurgitating in the liver must create hepatitis; and how the shock and collision of passions may rend and break the heart asunder!

It may be observed, that however completely the subject of organic diseases of the heart, appears here to have been treated, it scarcely provides for a new or for an effectual remedy against incurable and fatal cases; and that sound dictates of the healing art were never wanting to aver or mitigate, in many instances, the same diseases, which are proved to have been hitherto mistaken or confounded with others. Far from impairing the merit of this work, these inferences are intended still more to evince its utility in physiology, and general practice. A thousand antidotes would add less lustre to the science of medicine, than one single truth, which,



restricting its power, the better establishes its real dominion over the laws and productions of nature, which it has the power to convert to the benefit of health and life. We fear not to affirm, therefore, notwithstanding any systematic opinion to the contrary, that no intelligent reader of this treatise will ever close it, without recapitulating with interest, the luminous expositions with which it abounds, without instinctively feeling some of the discriminating power which it affords, and who would pretend to controvert any of the applications it points out for daily occurrences in practice. In a late periodical journal we have seen it affirmed, that undoubtedly there were *errors* in that work ; at least, *minute errors of detail*, the existence of which we do not deny, although we humbly acknowledge not to have perceived any of the kind. If it be partiality that has blinded us, let us hope that *impartial* readers will remit so much of our responsibility as our candour may require.

It has been however judiciously premised as a circumstance to be lamented, that Corvisart's work had not been written by himself, and that it was impossible for one man to express the sentiments of another, in a style perfectly clear and unrestrained. We dissent too from this opinion, because the original text is, in a distinguished degree, an accurate composition, of a good style, and of a fluent language. It must be freely admitted that Corvisart in the exalted rank where he has been placed by his Sovereign, and which he holds among great literary institutions, has not entrusted the arrangement of his materials to a writer of ordinary talents. But it must be confessed, the English translation by which it has been judged of, is a very forbidding exhibition of it. With this version merely, we might substantiate something like *minute errors of detail* ; and its gross imperfections, we cannot shrink from the duty of noticing, while our labours are so unreservedly dedicated to the improvement and diffusion of medical literature.

*Obscurity* has been the first fault of the translator, as if he had not been aware that in two tongues, so different in their genius and idiom, composed ideas and sentences could not be well translated in a like order

*and arrangement of parts.* He has frequently taken liberties with, or mistaken the meaning and designations of the original text. This is a highly correct, and almost *courtly* language, which it was impardonable to contrast with numerous *provincialisms*, and even grammatical errors; strange features indeed to the eyes of the least scrupulous admirer of the copiousness, purity, energy, and precision of the English language! We say nothing of what we agree to call typographical errors. At all times, in this subject, *veniam petimus atque damus vicissim*; and if it be suggested that, in these our animadversions, we should not omit to prove them by quotations, we must be permitted to declare that of the two, to abide by the consequences, or to suppress a more painful exhibition to the translator, we choose at present, the latter.

The sale and circulation of this work cannot, we hope, be materially injured, when we add that its importance should prevail over all those *imperfections*, which for the honour of so valuable a performance, it was necessary to enumerate. They are less numerous in the latter part of the translation, where we gradually come at something like a tolerably correct style. Studious readers should not reject the means of acquiring useful knowledge, because it is offered in a less perfect mode than what they might require. The translator, to whom we wish success, would probably, with less hurry and more attention to his task, become as useful to society in diffusing literary treasures as the opulent merchant, who supplies it with the varieties of foreign goods. Should he undertake a correct edition, we will not be backward in praising and recommending it as a meritorious attempt to circulate a work, which ought to be seen in the bookcase of every physiologist and practitioner.

REVIEW OF SIR HUMPHREY DAVY'S ELEMENTS OF CHEMICAL PHILOSOPHY; READ BEFORE THE CABINET OF SCIENCES. BY THOS. D. MITCHELL, M. D. OF PHILADELPHIA.

EVERY branch of science is capable of being improved or injured by treatises, in general circulation. Many works are highly beneficial, while others, not only retard the advancement of a young student, but tend to confuse the understanding of those, who have made considerable proficiency.

The treatise before us displays much learning, extensive reading, and industry in experimental researches. But it is obvious, that in saying so much, we say all that can be justly asserted in favour of the work. That ingenuity, which results from the daring strides of a fertile imagination, and which characterises the man of inventive talents, is no where to be found in the "Elements of Chemical Philosophy." The author prosecuted his designs under circumstances the most auspicious. Aided by a wealthy society, he was enabled, by means of the most powerful agent of decomposition, to realise the conjectures of several chemists, who flourished more than twenty years ago. The use of these means manifested nothing more than industry, which to be sure, is an important auxiliary in the prosecution of any object.

Mr. Davy has advanced on dangerous ground, in his attempt to change the nomenclature of chemistry. Innovation of this kind, unless founded on the most obvious demonstrable facts, is to me the most odious, and injurious thing in any branch of science. But, when void of rational testimony in its favour, and vulnerable at every point; it is to science a box of Pandora, pregnant with evils. The best informed become confused, and the path to knowledge is strewn with brambles and thorns.

These remarks are offered, as a general description of the volume under examination. We shall now attempt to analyse it, by the delicate tests of reason and fact; the pure matters shall be preserved and duly estimated,



the sediment being weighed with accuracy, shall be disposed of accordingly.

The "Introduction," discovers a degree of learning and extensive reading, seldom to be met with in modern writers. It presents an excellent history of chemistry, not however quite as candid, as it might have been. This neglect is too common among writers on the same branch of science, and has always retarded improvement.

The subject of "Heat or Calorific Repulsion," is treated in an admirable manner, and deserves the attentive perusal of every scientific character. We read (page 53), "If a specific fluid of heat be admitted, it must be supposed liable to most of the affections which the particles of common matter are assumed to possess, to account phenomena; such as losing its motion when combining with bodies, producing motion when transmitted from one body to another, and giving projectile motion when passing into free space; so that many hypotheses must be adopted to account for its mode of agency, which renders this view of the subject less simple than the other; very delicate experiments have been made which shew that bodies, when heated, do not increase in weight. This, as far as it goes, is an evidence against a specific subtile elastic fluid producing the calorific expansion; but it cannot be considered as decisive, on account of the imperfection of our instruments; a cubical inch of inflammable air requires a good balance to ascertain that it has any sensible weight, and a substance bearing the same relation to this, that this bears to platinum, could not perhaps, be weighed by any methods in our possession.

Some arguments have been raised in favour of the existence of a specific fluid of heat, from the circumstances of the communication of heat to bodies in exhausted receivers, and from the manner in which they are affected by this heat; but there are no means known of producing a perfect vacuum; even the best Toricellian vacuum, must contain elastic matter."

Whether heat be a quality or a substance, has been disputed by the ablest philosophers. Long ago, it was supposed, that heat was only the product of a certain

motion in the particles of matter. It is difficult however, to decide the question; for, on the one hand, we know that an accession of heat evinces no increase in weight, and we do also know, that the size of bodies is magnified by caloric. We are inclined however to believe that it is a quality of matter, and not a substance.

“Chemical attraction, electrical attraction and repulsion, &c.” are treated in an able manner. The effects of galvanic influence are more clearly stated than in any other work. This might be expected from Dr. Davy’s constant operations, with a most powerful battery for many months.

Page 98, we read thus: “With regard to the great speculative questions, whether the electrical phenomena depend upon one fluid, in excess in the bodies positively electrified, and in deficiency in the bodies negatively electrified, or upon two different fluids, capable by their combination of producing heat and light, or whether they may be particular exertions of the general attractive powers of matter, it is perhaps impossible to decide in the present imperfect state of our knowledge. The application of electricity as an instrument of chemical decomposition, and the study of its effects may be carried on, independent of any hypothetical ideas concerning the origin of the phenomenon; and these ideas are dangerous only when they are confounded with facts. Some modern writers have asserted the existence of an electric fluid, with as much confidence as they would assert the existence of water, and have even attempted to shew that it is composed of several other elements; but it is impossible, in sound philosophy, to adopt such hasty generalizations. Franklin, Cavendish, *Æpinus*, and *Volta*, the illustrious advocates for the idea of a single electrical fluid, have advanced it only as hypothetical, as accounting in a happy way for most of the phenomena; and none of the facts that have been brought forward in favour of the actual existence of either one or two fluids, can be considered as conclusive.”

These remarks, form an excellent epitome of the conclusions to be drawn from the various disquisitions on the plurality of electrical power. The whole of this chapter is deserving of a careful perusal.

The chapter, on analysis and synthesis, contains some very pertinent remarks, and is on the whole more interesting, than any thing of this kind in other books of chemistry.

On the nature of the motions of radiant matter, page 124, we read thus: " It has been sometimes supposed that a specific imponderable substance, capable of producing light, is contained in oxygene gas; and it has been also imagined, that such a substance exists in inflammable bodies; but the facts are contradictory to the hypothesis. Iron when heated to whiteness, burns with amazing brilliancy in oxygene gas, throwing off sparks intensely luminous; but when heated to 600 Fahrenheit, it combines slowly with oxygene, producing heat without light; the chemical change is of the same nature in both cases; the only difference is in its rapidity and energy."

In these remarks, it is obvious that the author has mistaken his own object. He endeavours, by adducing fact, to show that oxygene gas does not contain light, but that in its combination with iron, the light passes from the latter; yet in a preceding sentence, he tells us that facts disprove the hypothesis, that light exists in inflammable bodies. Now iron is an inflammable substance, beyond all question, and the author has certainly contradicted his own assertion. But, I deny that facts disprove the hypothesis of the existence of light in oxygene gas and inflammable bodies. The very reverse is true; the experiment first performed by a common soldier, and afterwards by some of the National Institute, to ascertain the effects of compression on atmospheric air, proves most conclusively, that *this fluid* contains light, not imaginary, but cognisable to the sense of vision. Oxygen being a part of the atmosphere, we are impelled to conclude from all the known effects of oxygene gas in combustion, that the light proceeded from the part of the atmosphere. We have investigated the subject more fully in another \*place, and have there concluded, that oxygene gas, as well as inflammable bodies, contains light as a constituent part. Again, after stating the effects of the combustion of iron in the ordinary way, we are called to notice the phenomenon which occurs when

\* Memoirs of the Columbian Chemical Society.



the iron is heated to 600 Fahrenheit; it is said that light is not emitted, thus leading to the belief, that light had passed from the iron by means of heat, (a direct contradiction to a former assertion of Dr. Davy,) and that as light was not emitted, of course oxygene gas did not contain any of this fluid. Mr. Davy has not omitted to tell us, that the oxygen combined with the iron very slowly, when the metal was exposed to 600. This single circumstance is a negative proof, that oxygene gas does really contain light; because every one knows, (and surely Mr. Davy ought not to have forgotten) that there are many familiar experiments calculated to confirm this point. For example, the inflammable substance phosphorus, (which according to our author should not contain light,) will emit light in a dark room, if exposed to the atmosphere, or even when confined in a bottle; in this case, it has been proved that a slow combustion is going on, so slow however, that in day light, no luminous appearance would be observed. Now, if neither the inflammable substance, nor oxygene gas, contain light, or what Mr. Davy has called, for the sake of evasion, a "substance capable of producing light," then light should not be emitted in the slow combustion of phosphorus; nay more, it should never be emitted in any case of combustion. But let us attend to the phosphorus a little more; place a piece of phosphorus in a flask, and expose it to heat, and combustion will take place, with the evolution of light; but vary the experiment, by burning the phosphorus in oxygene gas, and the light will be brilliant.

Now we would ask, what is to be made of these phenomena? If phosphorus, not exposed to heat, nor in contact with oxygen, requires a dark situation, in order to make the emission of light obvious; if the action of heat, renders the evolution of light apparent in the day time, and if in addition to this the contact of oxygen, under similar circumstances, is productive of a vivid light, what can be inferred by any intelligent being, but that oxygene gas contains light? True, it may be said, that in the combustion of hydrogen, more oxygen gas is decomposed than in any other case, but that the light is not so great as in other cases; this, however, may arise,

from the nature of the combustible base, and ought not to influence the point in question. In page 127, we meet with a sentence which cannot fail to confirm the above remarks. "The strength of the attraction of the acting bodies determines the rapidity of combination, and in proportion as this is greater, so likewise is there more intensity of light and heat."

It is in vain for the advocates of Dr. Davy's reputed discoveries, to uphold them or their author, without the aid of rational testimony. But they have no other support than that which he has given; reason revolts and analogy refuses her aid to confirm such innovations in science. It is a lamentable fact, that cannot escape the notice of any careful reader of the "*Elements of Chemical Philosophy*," that the author, from the commencement to the close of the work, has asserted, and referred to assertions from place to place, as though they were not hypotheses, unconfirmed, and disbelieved by the most respectable chemists in this country and in Europe. We do know certainly, and we fear not to declare, that the most strenuous advocates of the novelties of Dr. Davy, are considered generally, as "mere skimmers on the surface."

In page 132, the author briefly notices the decomposition of carbonic acid gas by plants, and the subsequent evolution of oxygen gas. He does not even hint at the supposed decomposition of water by plants, and we think, very justly too; for although some persons have attempted to prove the latter position, yet we have never read an experiment on this subject, the tendency of which was not to prove the correctness of the first position, viz. that oxygen gas produced by plants, proceeds from the decomposition of carbonic acid gas.

Dr. Davy has told us, in his "Introduction," that "words should signify things." Mr. Lavoisier has much better expressed the same idea in the following sentence, viz. "The words ought to produce the idea, and the idea to be a picture of the fact." Both are intended to convey the very same idea, and are applied by the authors to nomenclature; and we hope to show that Dr. Davy, has not adhered to the rule, according to its application in all previous cases.

In page 133, our attention is called to the subject of oxymuriatic gas, or to what Dr. Davy has been pleased to call "*chlorine*." As this has been a subject of much disputation here and in Europe, we shall pay some attention to it. When the French nomenclature was introduced, it was found to be of such a nature, generally speaking, as to convey to the mind, the composition of each article. This is the meaning of "words signifying things," and of the "word producing the idea." But in the name of common sense, does the new term *chlorine* conform to the above rule? Is this a signification of the thing, or does it present a picture of the fact? *Chlorine* is derived from a Greek word, signifying *green*; and oxymuriatic gas has a yellowish-green appearance; true; but grass is also green, so are many other things, and *chlorine* will as well signify grass, as oxymuriatic gas.

Here, then, is innovation in nomenclature, unprecedented in science, contrary to established rule, and the premises of Dr. Davy himself. Are we then to receive it, in place of another term, conformed to rule, and as we believe, perfectly expressive of the real nature of the substance? Surely not. Let it be discarded, for all such changes are destructive to science. For the very same reasons, also, we object to "*euchlorine*."

Dr. Davy has laboured to prove that oxymuriatic acid gas is a simple substance, and that its combination with hydrogen forms muriatic acid. This opinion was first advanced by Scheele, and supported by him, on the principles of the phlogistic doctrine. But this doctrine being rejected as chimerical, any arguments founded on it could avail nothing in support of any point. Dr. Davy has succeeded no better than Scheele; for at best, the power which he employed, is confessedly delusive, and in the detail of his experiments, we find frequent occasion to induce us to form deductions, the reverse of those made by him.

Mr. Murray, than whom, no chemist in Europe is more worthy of our respect, has most ably controverted the opinions of Dr. Davy, relative to oxymuriatic acid gas; he has effected this, both by sound arguments and accurate experiments. The existence or non-existence of water, in various substances submitted to decompo-



sing powers, appears to have been the criterion by which Dr. Davy has endeavoured to establish several points. Water, we acknowledge, is an important agent, but the assertions of no scientific man have ever been more contradictory than those of Dr. Davy, relative to the presence of water in different articles. The truth of this remark will be obvious to any person, who will read the "Bakerian Lectures." In short, we do not believe that Dr. Davy has adduced reasons, even probable, in support of the position, that oxymuriatic acid is a simple substance.

In Division 4th, under the head of hydrogen, Dr. Davy speaks of *muriatic acid*, as though the connexion between *this* and *hydrogen*, were a matter of course, acknowledged by all chemists. It is for this very reason, that we venture to predict the speedy rejection of this system of chemistry.

We cannot pass over some remarks in page 142, without expressing our sentiments. "Those persons," says the author, "who suppose chlorine to be a compound of an unknown body and oxygen, conceive muriatic acid gas to be a compound of one fourth of its weight of water, and the same hypothetical substance; but as no oxygene has yet been shewn to exist in chlorine, so no such combined moisture has been proved to exist in muriatic acid gas." Now, we do not hesitate to assert that the first part of this sentence is destitute of candour, the latter part not strictly correct. Chlorine, if we attend to the author's direction for its formation, is exactly the same with oxymuriatic acid gas. Then I assert, that no one has ever publicly declared chlorine to be a compound of an *unknown body* and oxygene;" but all, excepting Dr. Davy, have agreed that it is a compound of *muriatic acid gas* and *oxygene*, because this composition has been demonstrated again and again. If instead of saying "an unknown body," Dr. Davy, had said, a body whose composition is unknown, there would have been less cause of objection. But again; our author has said, "that oxygene has not been shewn to exist in chlorine, and that no combined moisture has been proved to exist in muriatic acid gas." We say, and we are justified in the assertion, that no person has ever shewn, that oxy-

gen did not exist in chlorine, but that thousands of experiments have proved its presence in that *compound*; moreover, we assert, that muriatic acid gas does contain water, and if our readers will accept it as good evidence, we will give Dr. Davy's own words: "Muriatic acid gas, as I have shown" says our author, "and as is further proved by the researches of Messrs. Gay Lussac and Thenard, is a compound of a body unknown in a separate state, and *water*." To prove that this water is combined, he goes on to state, "that it cannot be decomposed, unless a new combination is formed." So much for assertions, which have no rational foundation. The doctrine, that water is the ponderable base of all gasses, was taught many years ago, and we believe it to be a fundamental truth. It is embraced by many respectable chemists, here and elsewhere.

If we judge correctly, Dr. Davy is averse to the opinion of the chemical composition of the atmosphere. Many other persons suppose it to be a simple mixture; but we are of opinion, that one of the laws of chemical affinity confirms the opinion, that the atmosphere is a chemical compound. That law teaches us, that wherever the individual properties of bodies are destroyed by union, chemical action is indispensable; and neither of the components of the atmosphere retain in that compound, their individual and peculiar characters.

Dr. Davy has introduced the terminations, *ane*, *anea*, and *anée*, founded on the new name chlorine; but as the latter cannot be admitted, the former must, of course, be rejected.

The chapter on inflammables, contains much interesting matter; not, however, sufficiently important, to compensate for the evils, which might result from injudicious changes in nomenclature.

In the 5th Division of this work, we are presented with an account of the metals; but we cannot approve of the division which Dr. Davy has made, viz. "into metals that produce alkalies, metals that produce oxides, and metals that produce acids." All metals are convertible into oxides, and some by being charged with oxygen to the highest degree become acids. This we think is more applicable to metals, as a general rule, than are

the remarks of our author. If we should even admit, that some metals may be converted into alkalies, this would only be to say, that some metallic oxides possess alkaline properties.

In the class of metals, Dr. Davy has placed potassium, as the first. Now it is doubtful, after all that has been said, whether there be such a metal. We are inclined to believe, with William Hembell, Esq. that it is nothing more nor less, than potash in its greatest state of purity. But even supposing it to be a metal, what effect can this produce on the nomenclature of the French chemists? Surely none. The metallic nature of both the alkalies and earths was conjectured many years ago, and in Lavoisier's chemistry, we find that barytes, lime and magnesia were reduced to a metallic state by Baron Born. A thousand discoveries of this nature would strengthen, rather than invalidate the French chemistry. But we cannot omit to mention an important objection to Dr. Davy's speculations on potassium, sodium, &c. an objection suggested by Mr. Hembell, and which must be obvious to every one. In the process for obtaining potassium, by means of a gun-barrel, &c. aided by intense heat, turnings of iron are employed for the purpose of assisting in the decomposition of the potash; this latter, we are told, is finally decomposed, the oxygen uniting to the barrel or to the filings.\* Now Dr. Davy has most unequivocally asserted, that the substance called potassium possesses the most powerful attraction for oxygen, of all known substances. If this be the case, ought we not immediately to conclude, that potassium would seize upon oxygen with avidity, the very moment after its separation? If the iron be able to retain oxygen, notwithstanding the presence of potassium, then the affinity is stronger between oxygen and iron, than between oxygen and potassium. There is, to say the least that can be said, something mysterious, not yet solved, in the history of the "new metals."

Dr. Davy, in treating of the metallic bases of barytes, magnesia and lime, has omitted to notice the product of

\* I have been informed, that instead of oxidation appearing on the iron filings, they exhibit a "silvery whiteness."



a metallic regulus, from each of those articles by Baron Born. The bases have been called, by Mr. Kerr,\* *barytum*, *calcum* and *magnesium*; Dr. Davy has called them *barium*, *calcium* and *magnesium*; the base of magnesia being the same with both. We have considered it highly proper, to mention the result of Baron Born's experiments, because many persons may read Mr. Davy's work, who have not become acquainted with the others.

The residue of Dr. Davy's treatise on the metals is very objectionable, on account of the constant introduction of his new terms. With these exceptions, he has given us a tolerably good history. But, there is very little doubt, that several of the metals of which our author has treated, are modifications of one metal. We do not believe that nature has been so profuse in her distribution of this class of bodies, as some imagine, when little advantage can be shewn to arise from several of them. It is not improbable, that *art* has made more of the bodies that receive the name of metals, than nature ever formed.

We have thus ventured to examine the "Elements of Chemical Philosophy," without regard to any man or men, but solely with a view to the advancement of chemical science; firmly believing, that the innovations of Dr. Davy, might, if believed, produce very material injury to the science, we have not been backward in deprecating them, as evils of the first magnitude.

The work before us, separately considered, that is, without a previous acquaintance with the Bakerian Lectures, cannot easily be comprehended by any person; of course it can never be the favourite system of the young student. The plan and arrangement is somewhat different from that of other chemical works; we do not know, however, that this is objectionable.

Finally; the merits of this work consists in the following particulars, viz. In the great industry of its author, in experimental research; in the able manner in which he has treated that part of his work, which has less relation than any other, to his reputed discoveries,

\* In his translation of Lavoisier.

and new terms ; and lastly, in the spirit of investigation, which has every where been excited, both to prove and disprove his assertions.

Thus have we arraigned for investigation, the work of Sir Humphrey Davy, and thus have we passed our feeble *verdict*. Whether *it* shall be reversed by the public, that high court of errors and appeals, time, alone must determine.

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AMERICAN ORNITHOLOGY, &c. BY ALEXANDER WILSON,  
VOLS. 5 and 6. (*Continued from p. 174.*)

WITH drawings executed from the life, by Mr. W. himself; engravings done by Messrs. Lawson, Murray and Warnicke; types cast by Messrs. Binny and Ronaldson; printing performed by Messrs. R. and W. Carr; and paper manufactured by Mr. Amies, the publishers, Messrs. Bradford and Inskeep, continue to gratify their subscribers, and the rest of the reading class, with this superb work on natural history.

Among the questions satisfactorily solved in these volumes, are those relative to the alleged sameness of the Night-hawk and Whippoorwill, of our country. These are two species of birds, as the author satisfactorily proves. They belong to the family of Caprimulgus, or Goatsucker, and inhabit all the regions of North America from Hudson's Bay to the Gulf of Mexico. There is no specific description of the *C. Americanus* or Common Night-hawk, in Turton's translation of the Zoological Section of Linnæus' System of Nature. And in that work, the generic character itself is incorrect. The Whippoorwill, though so frequently heard and mentioned, is now for the first time described by Mr. W. from ocular and personal acquaintance. It differs from the Night-hawk, not only by its note, but by the paler and browner colour of its plumage; by its love of high and dry situations; by its greater fondness for the interior and elevated districts; by having the margin of the mouth beset with long, thick, elastic bristles, the longest of which project half an inch or more beyond the point

of the bill ; and a variety of other particulars, communicated in vol. 5, p. 76.

The Night-hawk and Whippoorwill are two of the three species of this singular family of birds, found in the United States. Twelve other species of *Caprimulgus* are said to be inhabitants of other regions of America. To these fifteen sorts, known in our hemisphere, are to be added several trans-Atlantic kinds, one of which dwells in Europe, one in Africa, one in New Holland, and two in India, making twenty species in all.

The other member of this family belonging to the United States, is the *C. Carolinensis*, or *Chuck-will's-widow*. This is seldom or never seen to the northward of James River, or Virginia at furthest ; but frequents almost entirely the more warm and southern latitudes. Its excursions seldom go beyond Petersburg and Richmond, on the east side of the Allegheny Mountains, and Nashville on the west. It inhabits in great numbers, the forests of Georgia and the Mississippi territory. Like the Whippoorwill it has a bristly mouth. And early in September it withdraws from the territory of the United States. This bird too, is now, for the first time, naturally described and figured.

In giving the history of our five species of native swallows, Mr. W. is mindful of their migrations and hibernations. He considers the relations of those who assign to these swift-winged individuals of the feathered race, winter-quarters in the bottoms of lakes, rivers and ponds, as ridiculous and absurd. This may be the case ; but really, with so much evidence as is extant in favour of their submersion, and that too from correct observers, lovers of truth, and men of great weight and consideration, in both hemispheres, we would for ourselves, have given a less harsh and peremptory decision. It should ever be remembered that *a priori* reasonings are of little value in physicks ; and that analogies ought never to be substituted for experiments and demonstrations. It ought also to be considered, that one positive fact is of more worth and importance than an hundred or a thousand negative statements. And with these views of a controverted subject, on both sides of which great names and authorities are arrayed, we think our author would



have appeared more in his own modest and unassuming character, if in presenting his facts and opinions upon the migration of swallows, he had encouraged a more careful inquiry into the stories concerning their submersion. But opinions do not alter facts; and it may be expected that the additional observations will soon be made, which will remove all difficulty and doubt, from this dubious question.

That we may give our amiable and indefatigable ornithologist, a fair exhibition to our readers, we lay before them a part of his account of the fish-crow (*corvus ossifragus*), of our sea coast; a bird which feeds upon the carcasses of marine animals, and which has never been described by a naturalist before. Vol. 5. p. 27 :

After a just and entertaining history of the Osprey, or Fish-hawk, Mr. W. thus proceeds to describe the Fish-crow :

“ This is another roving inhabitant of our sea-coasts, ponds, and river-shores ; though a much less distinguished one than the preceding, this being the first time, as far as I can learn, that he has ever been introduced to the notice of the world.

“ I first met with this species on the sea-coast of Georgia, and observed that they regularly retired to the interior as evening approached, and came down to the shores of the river Savannah by the first appearance of day. Their voice first attracted my notice, being very different from that of the common crow, more hoarse and guttural, uttered as if something stuck in their throat, and varied into several modulations as they flew along. Their manner of flying was also unlike the others, as they frequently sailed about, without flapping the wings, something in the manner of the raven, and I soon perceived that their food, and their mode of procuring it, were also both different; their favourite haunts being about the banks of the river, along which they usually sailed, dextrously snatching up with their claws, dead-fish or other garbage that floated on the surface. At the country-seat of Stephen Elliot, Esq. near the Ogechee River, I took notice of these crows frequently perching on the backs of the cattle, like the magpie and jackdaw of Britain; but never mingling with the common crows, and differing from them in this particular, that the latter generally retire to the shore, the reeds and marshes to roost, while the Fish-crow always a little before sunset seeks the interior woods to repose in.”

After a recital of various other particulars, he concludes with this admonition :

" I would beg leave to recommend to the watchful farmers of the United States, that in their honest indignation against the common crow, they would spare the present species, and not shower destruction indiscriminately on their black friends and enemies; at least on those who *sometimes* plunder them, and those who never molest or injure their property."

We also present to those who honour our pages with a perusal, a second extract, from Mr. W's description of the *White* or *Barn-owl* (*Strix flammea*) called also the *Church-owl* and *Screech-owl*; vol 6, p. 57.

" This owl, though so common in Europe, is much rarer in this part of the United States, (Pennsylvania) than the preceding (the *Strix Virginiana* or Great-horned Owl); and is only found here during very severe winters. This may possibly be owing to the want of those favourite recesses in this part of the world, which it so much affects in the eastern continent. The multitudes of old ruined castles, towers, monasteries and cathedrals, that every where rise to view in those countries, are the chosen haunts of this well known species. Its savage cries at night, give with vulgar minds, a cast of supernatural horror to those venerable mouldering piles of antiquity. This species being common to both continents, doubtless extends to the arctic regions. It also inhabits Tartary, where according to Pennant, the Monguls and natives pay it divine honours, because they attribute to this species, the preservation of the founder of their empire, Jenghis Khan. That prince, with his small army, happened to be surprised and put to flight by his enemies, and forced to conceal himself in a little coppice: an owl settled on the bush under which he was laid, and induced his pursuers not to search there, as they thought it impossible that any man could be concealed in a place where that bird would perch. From henceforth they held it to be sacred, and every one wore a plume of the feathers of this species on his head. To this day, the Kalmucs continue the custom on all great festivals; and some tribes have an idol in form of an owl, to which they fasten the real legs of one."

On the plate containing the likeness of this bird, are also the figures of the *American Meadow-mouse*, and the

*Small Brown Bat*, two undescribed creatures, on which the Screech-owl feeds.

As we are engaged upon the owl, we shall indulge the opportunity of mentioning an occurrence connected with his history.

There lately came into our hands a piece of money, called the OWL. It is the Γλαυξ of the ancient Athenians. As the Americans have chosen the "Eagle" to be their favourite bird, and have given to one of their favourite coins the same name; so the Greeks of that celebrated state, called one of their pieces of current silver by the very name that characterised the fowl of Minerva. The coin we possess, was probably in circulation, in the age of Pericles, which according to the vulgar chronology, was considerably before the Christian æra, or probably twenty-two hundred years ago. The owl of Athens, was of the value of four Attic drachmas. Dr. Arbuthnot has particularly described it in his profound and admirable Treatise upon the Coins and Money of the Ancients. It was called the Tetradrachma. By a calculation made from Arbuthnot's tables, the Owl is worth about sixty cents. Though on being weighed at the Custom-House of New-York, the collector pronounced that its value was rather more than sixty-two cents and one half. On one side of this piece is the head of Pallas, the tutelar deity of Athens. On the other, is a fine figure of the *Owl*, or Γλαυξ, with the letters ΑΘΕ an abbreviation of Athenæ, Athens. On the same side is an olive branch, consisting of stem, fruit and leaves, displaying the most precious gift of the goddess to mankind; as is also, the Crescent or new Moon, the emblem of renovation, rejuvenescence, and joy. But we refer to Mr. Bryant's analysis of ancient mythology, a work of wonderful ingenuity and erudition, for further explanation.



## MEDICAL AND SURGICAL CORRESPONDENCE.



### I. CASE OF WORMS MISTAKEN FOR SPOTTED FEVER, AND TREATED AS SUCH.

*Communicated by Dr. Aaron King, of Palmer, Hampshire county, (Mass.) to Dr. Samuel Akerly.*

THE case of worms, (mistaken for spotted fever,) which you wished me to relate, was a girl about six or seven years old. She had complained for several days of pain in her bowels and sickness at stomach. Her mother supposed her complaints to arise from worms, and gave what she thought good to destroy them. The child becoming no better, a physician was called and pronounced the disease *spotted fever* !

He ordered the child to be wrapped in a flannel sheet, wrung out of hot water ; put her into bed, and placed around her billets of wood taken from boiling water, and directed frequent large doses of opium, and as much brandy as the child could be made to swallow. This treatment was continued about twelve hours and the child died.

The mother of the patient having some doubts whether the disease was spotted fever, sent for me to examine the body. Nothing uncommon appeared on opening the abdomen, except the very great number of worms found in the stomach and intestines. They were almost full from the stomach to the rectum. In a number of

places the gut was quite distended with large bunches of worms knotted together. It was judged by those who saw them, that there were between three and four hundred; and the most of them were from four to eight inches long.

About the time the above case happened, several instances of intoxication were treated as spotted fever; the particulars of which would be no ways interesting nor edifying.

#### REMARKS.

The alarm excited in several parts of Massachusetts and Connecticut, by the prevalence of spotted fever, introduced the universal and indiscriminate use of powerful stimuli, both as a means of cure and a preventive. When a person was taken sick, lest his case should terminate in the prevailing epidemic, he had recourse to strong drink, in some cases even to intoxication, which producing delirium, a physician would be called to administer aid. When, two years ago, one of the editors visited that part of Massachusetts, where Dr. King resides, it was ascertained that he and a few other physicians had opposed the pernicious practice which had produced as much destruction as spotted fever itself. The practice of tipping to ward off disease, had crept into all classes of society, and was as injurious to health as the dram drinking and *antifogmatics* of other parts of the American States.

#### II. A CASE OF MORTIFICATION AND SPONTANEOUS SLOUGHING, FROM THE EFFECTS OF FROST.

*By James Inderwick, House Surgeon to the New-York Hospital.*

In the winter of 1811, Marshall Sands, a mulatto, of a stout, athletic frame of body, and of an intrepid turn of mind, was taken sick,\* and became delirious. In

\* The disease is uncertain, as no physician attended him.

this state he escaped from his miserable lodgings, and wandered about the city during the severe easterly storm which commenced on the 24th December, 1811. The delirium left him, but both his feet became severely frost-bitten. He passed the winter with little or no medical aid, and the relation of his case, as obtained from himself, is as follows :

After his extremities were frost-bitten, mortification soon came on, and his feet separated at the ancles. The tendons not sloughing as soon as the muscular parts, the feet thus detached became troublesome, and without advice or hesitation he applied a pocket-knife, and by cutting off the tendons thus entirely removed the depending mass of mortification from the sound parts. He continued confined to the house till April, 1812, about four months after the accident, when he was seen walking the streets with the help of two crutches. By exposing his stumps to the curiosity of several, a number of persons soon collected, and this drew the attention of a medical gentleman that was passing, and who inquiring into the case, reported it to the governors of the New-York Hospital ; and I was accordingly sent to examine his situation, and have him removed to this charitable institution.

After his feet were removed, sphacelation continued to progress, till about four inches of the tibia and fibula of both legs were laid bare. This was his state when he first walked out in April, the stumps being covered with healthy granulations, and the bones very much blackened. He walked on the ends of the tibia, and supported himself by the crutches. He found great difficulty and pain whenever the fibula touched the ground, or bore any part of the weight of the body ; to prevent which, he had fastened a piece of cork on the ends of the tibia, and covered them with rags, and thus he walked with considerable expedition.

His appetite continued good, and his spirits were unbroken. He could go daily to market and carry home provisions ; when at length, his whole weight bearing upon the right leg, the bones broke off close to the stump, and he fell. Within a day or two of this accident I



first saw him, and had him conveyed to the hospital, where he was received on the 22d April, 1812.

At that time the ulcerations on the extremities were in a healthy condition; the granulations of a florid colour, firm, and remarkably exuberant; rising at least one-fourth of an inch above the surface of the surrounding skin. The discharge was purulent and of a good consistence, but it was in some degree fœtid, especially in that leg from which the extremities of the bones were accidentally broken. On the other ulceration, from the centre of which the bones yet projected, the fœtor was not so perceptible. His general health remained unimpaired, and on that account our attention was at that time, entirely directed to the condition of the sores. Having been subjected to the customary cleansing, he was put upon the usual diet of the house; dressings of lint and simple cerate were directed for the parts, and the lunar caustic was freely applied to the surface of the sores. After some time, by a perseverance in these means, the redundant granulations were depressed to a level with the surrounding integuments, and cicatrization commenced, and continued slowly to progress. Several spiculæ of bone were at different times taken from the right extremity; while in the left the lifeless ends of the tibia and fibula remained rigidly fixed.

It was now thought advisable to direct a more nourishing diet, and to allow him the moderate use of wine. Opium was also occasionally administered, on account of aches and pains which were sometimes particularly troublesome at night.

After a lapse of some weeks, no indication of a separation of the dead from the living bone appearing, I was directed by the visiting surgeon to saw off the projecting extremities as close as possible to the ulcerated surface. Notwithstanding the irritation necessarily consequent upon this, together with the liberal employment of caustic to the part, the process of exfoliation was slow and tedious, and (if my memory serves me,) was not completed in the space of two or three months.

After this period the ulcers assumed an indolent character, although a variety of stimulating applications

were successively used, their progress towards a cure was extremely tardy. When he was discharged from the Institution, they were about an inch in diameter, and had continued obstinately stationary for a considerable length of time.

III. **INTESTINAL WORMS DISCHARGED FROM AN ABSCESS OF THE LIVER.** *Communicated by Josiah Hornblower, M. D. of Bergen, New-Jersey, March 23, 1813.*

The circumstances of this remarkable case, as stated in writing, and detailed verbally, by the above gentleman and by his pupil, his own son, were that they visited a little girl, ten years old, who had a considerable swelling in the region of the liver, with much soreness;—that the least pressure would increase her pain;—that her fever had been of near a month's continuance, and that the swelling was attributed to a kick she had received from a black man. At first, discutient remedies were ordered for some days, without abatement of the symptoms, when it was determined to apply emollient poultices, the use of which was accordingly continued during four days, not omitting gentle cathartics. Discharges of purulent matter per anum were now observed to take place. The pointing of the swelling in the middle of the lower edge of the great lobe of the liver, evinced the certainty of an abscess with adhesion of that viscus to the peritonæum, which determined the doctor to open it, by an incision of an inch long. A great quantity of matter, partly purulent, and partly sanious was let out. The dressings of the wound were simple, and the best that could be devised to procure by a gentle and regular pressure a more complete discharge of the contents of the abscess. Then it was that worms of the lumbricus kind, begun to issue alive, by the opening made into the liver. They successively came out of different but ordinary size to the number of eleven; several dead ones were also discharged, which preserved only an imperfect form.

The wound remains open to this day. The discharge of matter is but small and the regular state of all

the functions of the child, give the pleasing prospect of a perfect recovery.

#### REMARKS.

However rare and singular this case might be, it requires not much comment, when it is considered that an adhesion was effected, during a long period of inflammation, connecting the peritonæal surfaces of the liver, duodenum and colon. It is known indeed that an inflammation on any part of that irritable membrane, can easily and simultaneously affect all the sack and its duplicatures. The abscess, first opened into the intestines, affording purulent discharges. There was then a way for intestinal worms to creep into the great cavity of the abscess, from which they were afterwards expelled by the action of the diaphragm, and of the abdominal muscles. The prognostic of this organic disease was difficult, and portended much danger, owing to the possible introduction into the pouch of the abscess, of some particles of food, and to the formation of depending fistulous excavations, between the connected surfaces of the peritonæal coat. Charles Bell informs us of the fatal effects of a kick by a horse on the belly of a young man, who died after a long period of suffering. Upon dissection, the liver, the omentum, the intestines and stomach were found connected by adhesion, and the latter was turned to a bloody grumous cancer. (*Vid. System of Dissection.*)

#### CASE IV.

*Of Anaphrodisias brought on by the power of imagination, and cured by the same. With a note on the means of husbanding the vigour of the Merino Ram, and propagating his species. By J. MASON, Esq.*

A Polish gentleman aged 36 years, of a bilious temperament, hale and of a stately figure, had been married to a young person of a corresponding constitutional degree of health and vigour. He happened to be engaged in a



dispute with a gentleman whom he suspected to be versed in the art and practices of magic, and he apprehended consequently that by malice and revenge, his enemy probably would throw a spell upon him, and (*Nouer L'Aiguillette,*) render him impotent.

Deeply struck with this horrid thought, he went to bed, in the nuptial couch, anxious to verify the case, but well resolved to overcome it, when alas! he experienced that he was incapable of dispelling the fiend's magic power, in spite of his efforts. He next day undertook to resuscitate his wonted activity by the use of some liquors which at other times he had known to be stimulants to that effect. All was in vain, and he remained impotent and preyed upon by the distressed feelings naturally arising from his partnership with a young and beloved wife. Ten days elapsed of renewed exertions and fruitless attempts, the effect of which still more increased his debility and lowness of spirits, until he was prevailed upon by his wife to seek and obtain medical aid, if there could be any in this strange case.

The physician to whom he applied, undertook at first to reason with him on the fallacy of his belief, and the non-existence of a *magic spell*, as a cause of the inability he complained of. But he soon perceived that this method would likely fail in affording relief, while the imagination remained so far diseased as to affect the physical powers, and while the patient was so little disposed to apply any argument to his own case. He therefore mysteriously called him to a private interview, and confessed to be acquainted with this kind of witchcraft, and was willing to apply the means of dispelling it, provided he would engage his honour never to reveal his secret, nor the success with which it eventually must be attended with, as his character and tranquillity would be materially exposed and injured by such a disclosure. It is readily supposed that the patient unreservedly bound himself to an inviolable secrecy. The Doctor then exhibited an old, large Latin book, in which he loudly read a few lines, making certain signs with his right hand over him, as a ceremonial. He desired him afterwards to go and eat an early supper, to drink cold water, two hours after to recite a formula of prayer he wrote for

him, and to go to bed, at a certain hour in the evening corresponding with his further operations. Should the *incantation* be not entirely broken the first night, he must call again for continuation of the process which must prove infallible. And indeed it was experienced so radically successful, that no repetition of this innocent stratagem was required; it was equal to what the imagination of the patient supposed to be necessary to overcome the diabolical influence, the horror and dread of which had suspended an animal function, so much connected with the agency of sensorial powers.

Mr. Etienne Brunaud\* apprises us that he was not the first who thus had so victoriously overruled not a supernatural power, but the influence of error and passion. The wise Montaigne (*Essays, Lib. i, c. 20*) cured a noble friend of his, of the same disease, and by the same remedy. Indeed, in his age of superstition and ignorance, instances of similar delusion were more frequent. We also read in his book that a King of Egypt called Amasis, had been married to a beautiful Grecian girl, and that the first day of his nuptials, and in the height of his ardour, he experienced from some cause an absolute cessation of natural powers. He therefore accused her of having thrown a spell upon him, for which he threatened her with death. Laodicea (for such was her name) not only repelled the unfounded accusation, but she reminded him of a higher power whom he had perhaps offended; that he would not fail of being relieved by the goddess of Cythera if he only would offer to her sacrifices and supplications in her temple. This act of worship operated in his mind so effectually as to dispel the incantation he complained of; nor would he substitute revenge to the gracious smiles of his love.

Kempfer (*Amæn. Exot.*) has transmitted the story of certain nations of India, who think it a duty to enervate youths who are engaged for marriage. It is their custom and practice to submit them to certain ceremonies, to the influence of magic words, and other mysterious acts, by which their credulous and ignorant minds really experience a temporary or a gradual restraint of what is

\* Vide Journal de Medicine of Paris, July, 1812.

deemed a dangerous passion. From all these facts we may infer that fear, shame, and other passions will greatly counteract organic functions, which it has been a wise provision of nature to submit to the control of prepossessions of the mind, of dispositions of the heart, and of other association of ideas. If merely the sight of a seducing object, and even the recollection of her charms may have a powerful influence on the organs of generation, it is incontestable that fear, hatred, &c. must produce contrary or asthenic effects, and constitute anaphrodisias, until an equivalent power corrects through the mind, the delusions of imagination.

The law which subjects the propagation of our species to moral and physical impressions, is also exemplified in the brute creation, as far as their instinct or sense of smell and sight can be affected by external objects. In the most ancient and sacred record of a covenant between the shepherd Laban and his servant Jacob, about a settlement of dues of the former for the services of the latter, we read that it was agreed that all the small cattle of *variegated colour* then living, and which would henceforth be born, should be the property of Jacob, who thereby pledged himself to renounce all claim or demand of the cattle of *one colour*, exclusively belonging to Laban. Both kinds were consequently separated by an extensive tract of three days journey. But Jacob took care to improve his own stock by the following innocent stratagem. At the watering places and troughs where the healthiest rams, ewes and goats frequently resorted, he loosely scattered rods and branches of trees, stripped of their bark and others that were contrasting with these by their outside colour, the whole forming a variegated impression to the eyes of the salacious animals. He therefrom obtained a greater number of lambs and kids of *ring-streaked and speckled colour*; he greatly improved his wealth, and speedily procured his independence. (*Vid. Genesis, ch. 30 et seq.*)



## NOTE.

*Minutes founded on experience, as to the means of husbanding the vigour of the Ram.*

First, the habits and propensities of the sheep, male and female, in this work of nature, are to be understood. In our climate, (that of Virginia and Maryland) the Ewe is inclined to receive the Ram from the 1st of August to the 1st of November; this is the rule; but there are many exceptions—the inclination occurs partially on the part of the Ewe, at all seasons of the year, when she is not giving suck, and is in good condition; and indeed, there are many instances, when she takes the Ram, with a Lamb at her side. The season at which most Ewes in a flock, with ordinary keep, desire the Ram, is from the middle of September to the middle of October. It is to be observed also, that, although the Ram will be readily excited, at any season of the year, by the instinctive knowledge of an amorous female in his company, that he is habitually quiet, regardless of the Ewes—and found herding with wethers or other Rams at all seasons of the year, except the rutting season, before described; at the approach of which, (towards the end of July) he becomes restive, is disposed to fight, and begins to run as it is termed, or to hunt the Ewes:—and during this period, it is extremely difficult to keep them apart; they both Ewe, and Ram, will traverse extensive tracts, or bound over high fences to get together; thence, great precaution and vigilance should be used where a particular breed is to be preserved unmixed. The stories told of the impregnation of a flock of fifty or an hundred Ewes by a Ram in one night, are extravagant beyond measure. In the first place, it is against nature, as to the Female; in a flock of 100 Ewes, it will be found, on the closest observation during the season, that not more than six or eight are amorously disposed on any given day; and as to the Ram, although his powers are very great in this way, it will be seen on trial, that half a dozen Ewes are quite as many as he is disposed to pay his respects to, in the course of twenty four hours; and that even this provision is too great for him, if continued for several days successively. Another error on this subject exists; the general belief seems to be, that a Ram is so fast, and so sure, in his operation, that a single embrace from him suffices, and that he passes rapidly through a flock of expecting females, distributing a single favour to each, and leaving an impregnation for every act of coition—this is not so; let a Ram in full vigour, be put into a paddock, with half a dozen Ewes, each equally amorous and passive, and he will immediately attach himself to some one, and let the invitations from the rest be what they may, he remains constant to his first, till she is satisfied, which will generally be the case, in the course of an hour or two, and after she has received him some five or six times at intervals of from ten to twenty minutes; when he seeks another similarly disposed, and remains her attendant in like manner, and for about the same time. In correction of yet another improper impression, as to these matters, it is requisite to remark, that from every mounting, or leap, on the part of the Ram, there by no means results a coition; sundry accidents and barriers prevent this; although the action, in a case of failure, is very similar to one attended with success, and of as long, or nearly as long duration, yet to an attentive observer, there is a difference; and the act of coi-

tion may be distinguished, not only by the motion of the male, at the instant of junction, but by his manner immediately on quitting the embrace; it has been wittily said, *post coitum omne animal triste est præter Gallum*; this general remark certainly applies to the Ram.

As to the Ewe, she comes suddenly and rapidly into the disposition to meet her gallant, and then, for the time being, resigns herself entirely to him; not the smallest coyness is observable, except in very young Ewes. On this occasion, the female sheep, if not so amorous, is more passive than that of any of our domestic quadrupeds, the dog not excepted; her inclinations are discoverable if in flock with Ewes only, sometimes, though rarely, by her mounting on others, if in company with wethers, they will instinctively fondle on her; when in company with or near the Ram, she seeks him, remains near him, and will smell at, and caress him occasionally; but the strong decisive proof of her inclination is, that when the Ram mounts, she remains still, does not attempt to throw him, by moving forward, and will generally while under the Ram, bend her head round towards him: on the contrary, a Ewe disinclined, when mounted, uniformly moves forward with a quick pace, dislodges the Ram at every attempt, and thus presently dismisses him, satisfied that the pursuit is vain; yet will he in this way sue another, and another, through the whole flock, unless arrested by some one really amorous, during greater part of the day and night, constantly exhausting himself by fatigue, and for the want of food, which he rarely takes when in the midst of his female companions. It does not always happen that impregnation is the consequence of coition; with this, as with other animals, there is a degree of uncertainty; in a case of failure the Ewe returns to the Ram about the fourteenth day, and sometimes tho' rarely, this happens more than once to the same individual in a season; it may be reckoned, however that not more than one in the number of seven or eight will so return. The period of gestation is twenty-one weeks, two or three days more or less. Both sexes of this animal copulate at an early age, at six months, and at suck; a Ram Lamb will impregnate, and a Ewe will become a mother at twelve months, unless precautions are taken to prevent it.

From what has been said, it must be evident, that the same powers of propagation cannot belong to a ram at large with a flock of ewes, that will be possessed by one separated from all. the greater part of the day, admitted occasionally to a few at a time, of such as are disposed to yield, without the labour of running and suing on his part, and left to sleep and feed quietly the rest of his time: he may impregnate in the field, running at large with the ewes, fifty or sixty; if kept well, and apart, he will certainly do justice to an hundred and fifty in a season.

To effect our purpose, then, with the most safety and certainty, and with the least expense and trouble, is the object. By some, teasers are used, to facilitate the process; that is, a common ram is made an instrument wherewith to ascertain the disposition of the ewes, and as fast as they are found to be in the proper humour, they are taken from him, and put in with the more favoured breeder. This method, without great care, and close attention, is hazardous; the teaser may overact his part, and introduce a spurious race: to give an opportunity to such as may chuse to adopt it; however, it will be described. There are two ways of using a teaser: the most ready, if well watched, is to put him once a day, loose among the ewes, in a small pasture.



having first fixed on him an apron, to prevent mischief, and colored it with a little dry paint, ochre, or lampblack, that he may leave his mark on each ewe willing to receive him: this apron is made of stout linen cloth, about fifteen or eighteen inches square, and by means of two strings, is, at one end fastened round the body of the sheep, (a ribbon of the wool, an inch wide, being first taken off, all round the part to which the apron is to be secured, to prevent its slipping,) the rest is loose, so that when he stands in his ordinary position, the apron hangs down perpendicularly, just forward of the parts of generation, and touching the ground: when he mounts, the apron falls back, covers those parts, as he rises and becomes a complete barrier to his access. The other, and the safest, mode of employing the services of a teaser, is, to have him confined in a high, secure, but open fenced little pen, adjoining the enclosure, in which the Ewes are pastured, and exactly against his pen, and within the Ewes' enclosure, to have another pen opening, by means of a small gate, into the enclosure, so that the Ewes, when the gate is left open, may by entering this last pen approach the Ram, within the thickness of the fence, see him, &c. they should be driven up to that part of the field once or twice a day when it will be seen that those disposed to take the Ram, will be found hankering about the teaser and generally in the pen, prepared for the convenience of catching, as above described.

In preference, the following process, having been tried, and found to succeed entirely, is recommended, as the most safe, tho' not quite so advantageous to the breeding Ram. In the first place, for this system, (as for that where the teaser is employed,) let there be provided a paddock of an acre or two of good grass, containing shade and water, and well fenced, for your stock ram; here let him be confined with one or two wethers for company, at least a month before the season commences, and well fed on grain, Indian corn, hominy, oats, &c. twice a day, so as to get him in high order, and quite gentle; he should wear a leathern collar about his neck, for the facility of leading unless he be horned, in which case, it may or may not be used, as he can be handled by the horns. Between the principal pasture, in which the Ewes are kept and the ram's paddock, there should be, if it can be conveniently provided, an intervening lot or pasture, so that the Ewes may be at feed out of his sight: adjoining the Ram's paddock, and within the intervening lot, let there be two pens to receive the Ewes occasionally, one roomy enough for them to move in, without being crowded and the small, in order that, when turned into it they will stand so closely, a man may take hold of any one without racing or struggling; the fences of these pens should be straight, to prevent accidents by pressing the sheep against corners; they should join each other, and be connected with the ram's paddock; so that the fence of the paddock form a side of each pen, by means of three small gates, or setts of slip bars, the larger pen should open, on one side, into the smaller; on another, into the ram's paddock; and, on a third, into the intervening lot or pasture.

When the season has come for putting the ewes to the ram, which each person will determine by the time he wishes his lambs to drop, all those selected for breeding should be separated from the other sheep; their hinder parts should be cleansed of tags and filth, and the wool of every ewe should be shorn from and about the root of the tail, for two or three inches round; otherwise, the operations of the ram will



be retarded, and his vigour uselessly wasted, to a degree not at first to be imagined. The ram, when the season commences, should be well fed, but not excessively, on grain, every morning, at or before day break. At sun rise, the ewes are to be driven up into the larger pen, before described: the ram is then led up, and, thro' the gate that communicates, is turned into them, for half an hour, or thereabout, during which time, an attentive observer, will readily discover, by the habits described in the first part of this paper, which of the Ewes are inclined, and will learn to put his eye on some distinguishing mark on each, whereby to know her, at least until she can be caught.\* As soon as it is ascertained how many, or that four or five may be so selected, the keeper takes hold of the ram, leads him back into his paddock, and having first painted his breast, that is, the wool between a little forward of and behind his fore legs, with a spoonful or two of dry ocre, lampblack, or something of the kind, rubbed on with the hand, dismisses him. The Ewes are then turned into the smaller pen, and as many as have been observed to be properly disposed, but not exceeding four, are turned in with him, there to remain till the evening. The flock of Ewes are now turned to their former pasture, till the next morning, when the same operation is repeated. The Ewes left with the Ram, are taken from him, an hour or two before sunset. Those that have been served, as will be seen by the mark his painted breast will have left on their backs, should be put into a distant and separate pasture; and those not served, if any, returned to the flock they came from. This operation being repeated daily, will gradually diminish the numbers of visiting Ewes, and make every selection easier both to the Ram and to the keeper; and another advantage is that by withdrawing the served Ewes, for a time, from the sight of the Ram, they will be more apt to conceive: under this treatment, if he is hearty and vigorous, he will remain in good condition, throughout the season. Should at any time, his vigour be perceived to flag, the daily provision of Ewes should be lessened. After the whole flock shall have been marked by the ram, and thus passed into the distant pasture, they should be returned to their former station and made to revisit the Ram, as described in the first instance; when some will again be found disposed to take him: and finally, toward the end of the season, he ought to be out during the day, for two or three weeks, to run with the whole flock, in a near and safe pasture, that he may finish any little part of his work, left accidentally undone.

The attendance on the breeding sheep, during the season, should be confided to some intelligent and trusty man; and he should be particularly instructed to keep the ram quite gentle, and that he does not get a habit of butting, and to observe the Ewes so closely, whenever he has them about him, that he may learn to know them, one from the other; this is easily effected, and will be of great utility in ascertaining the particular state of the different Ewes.

When the proper arrangements are made, it will not require more than one or two hours, per day, of the keeper's time, to attend to his sheep. But in this, as in other matters, the superintendence of the master will make all more safe and all more sure.

\* *Because of the disposition of the Ram to attach himself exclusively to the first amorous female he comes across, it will be best to take each Ewe from him for the time being, as soon as she is found so disposed, as he will then go immediately on the search again.*

## NATURAL HISTORY.



*Information concerning the earthquakes which have prevailed in the United States since December, 1811; particularly in the States and Territories adjacent to the River Mississippi. In several letters from the Hon. STANLEY GRISWOLD, of Kaskaskias, to the Hon. S. L. Mitchill.*

KASKASKIA, (Illinois Territory,) Sept. 20, 1812.

—It is proper first of all to inform you, that there has been no complete cessation of this dreadful phenomenon since its commencement in December last; I mean at and near its supposed seat, on the Mississippi, a few leagues below the mouth of the Ohio river, about the settlement of New Madrid, &c. An almost continual motion has been felt there to the present time, together with a rumbling noise under ground, which is now by the people called "subterraneous thunder." The hard shakes there, were undoubtedly sufficient to have rased to the ground every building of brick or stone, if any had existed. Even here (150 miles above) all such were dreadfully wrecked. The strong, new stone house, where I live and now write, is cracked in every direction, and most probably would fall by another shake equal to some which have been experienced. The tremors from below frequently extend to this place; a week does not pass without our feeling some; a few nights since we had quite a severe one.

The idea I have formed on the general subject of the cause is, that a fire is feeding on some vast, hidden deposit of combustible matter, beneath the surface of the earth; not central perhaps, yet very deep in the ground. This fire, as it progresses, now and then lets in a body

of water from the subterraneous streams, or reservoirs, by which a powerful steam is constantly created, and heaves every thing above and contiguous, till it gains sufficient room, or is discharged into the air. The motion is extended to a distance, either by the continuity of the solid earth, or by subterraneous vacuities, channels of streams, &c. into which the steam darts, and almost at the same instant shakes places hundreds of miles distant. The force of the steam, in small shocks, may be wholly destroyed by condensation in the earth; but in larger ones, a part makes its way into the superior air by disruptions in the surface.

Several facts concur in demonstrating the existence of a subterraneous fire at that place, embracing a good many leagues in circumference. Indeed, there is not wanting evidence to render it probable, that the fire is progressing, or widening in its extent: many affirm, that the "subterraneous thunder" has now gotten considerably farther up the river than where it first was heard. And it is now a matter of speculation with the people dwelling on each river, whether it will take up the Ohio, or Mississippi, or both, after it reaches their junction.

But as to evidence of the existence of a fire, credible persons at and near New Madrid at the time of the heavy shakes, not only saw fissures open in the earth, but something like smoke, or steam, issue out of them. One gentleman was very near an exhibition of this sort in the day time; he stood and surveyed it deliberately; it issued rapidly and appeared hot; indeed he expected every moment to see it blaze, and believes it would have done so, if it were not for the large quantity of sand discharged with it. Clouds of a peculiar kind, supposed to be smoke, were observed in that direction even from this place at the time of the severe shakes.—But a more conclusive proof of the fire is the charred wood which was thrown up in several places. Not only stone-coal, but charcoal, is found near the fissures; the former however in the greatest quantities, and the latter is generally attached to logs and sticks not fully consumed. A very curious instance has been seen by several persons and I have no doubt of its existence;



which is a log lying along a fissure, one end of which has been converted into charcoal, and the other end into stone-coal, if the expression may be used. I understand a part of it has been broken off and brought to fort Massac, though I am not certain it is a fact. The log would be a curiosity in the cabinets, and it might be conveyed down the river in boats, and shipped to New-Orleans.—Another proof of fire is the lava which was thrown up, a good deal of which has been taken up floating on the Mississippi, some of which I have seen, and it bears every mark of the action of that element.

That there was an expansible force beneath, operating like that of steam, powerfully and equably every way, seems evident from the general fact, that the lowest places were the most shaken, there being a sensible difference between them and the high bluffs and hills. The reason of this, I suppose, was the least resistance to the interior expansive power that was found in the former places, the quantity of superincumbent matter being less, and of course lighter. It is a remarkable fact, that wherever water of considerable depth existed, the beds, or bottoms, were hoven up more than the adjacent land. Many lakes or ponds of water, exist through all this country in the low grounds adjoining the Mississippi. There were several such about New Madrid, and they are the highest ground in the vicinity, having been emptied of all their water, their fish perished (whose bones are still seen scattered over the country) and a rank vegetation covers what was once their beds.\* Water I suppose is lighter than earth, and of course opposed a less pressure to the expansive force beneath. Even the bed of the Mississippi was hoven up and occasioned a considerable fall until it gradually wore away by the current.

As wells of considerable depth have been dug in former years at New Madrid and the other settlements in that quarter, and neither logs nor coal were found, it

\* Were not all our prairies once lakes and ponds, raised in the same way? They generally lie a little higher than the surrounding woodlands. Being fired every year, the wood gets no foothold in them.

would seem the fire is deep in the earth. May it not be supposed, that there was once a great and deep lake in that part of the Mississippi (and perhaps in other parts, or generally through this vast bottom) into which wood and rubbish of every sort was floated from the tributary rivers, which at length filled it up, and a layer of soil was formed over it, through which the great river now runs? May not that be the deposit of combustible matter which is now on fire? And is it not possible, that by consuming away, a lake may again appear there? Or will the operation only convert it into a bed of fossil coal? Is charring the first step towards forming such coal?

May not a grand process, similar to what is above supposed, be going on in the great northern waters? May not the lakes there be filling up with the wood and rubbish of the country, and bye and bye become dry land, and the St. Lawrence be a long, continued stream, like the Mississippi, from the lake of the woods to the ocean? And then, may it not also be a country of earthquakes, from the deposited matter beneath taking fire? Or is it possible, that this supposed process has already passed there, and those lakes are the seats of former fires and earthquakes? Mr. Volney discovered marks of volcanic fires, especially around lake Ontario, and supposes that lake to have been once a crater.

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KASKASKIA, Dec. 22, 1812.

SIR,

I HAD the honour to receive per last mail, your letter of 3d ultimo; and am not a little gratified by the terms in which you speak of my communication concerning the earthquakes. Am happy if it will be of any service to your laudable design of publishing to the world your investigations on that subject. It gives me great pleasure to know, that you are engaged in such a work, and I hope nothing will deter you from carrying it into effect. It will prove a very interesting work and will be great-

ly sought for. Not only the apprehensions of the public from so terrible a phenomenon, will induce them to read any thing which relates to its cause, but the novelty of a professed treatise on that subject will excite attention generally, and its connection with science will particularly recommend it to the literati.

Of the facts which I communicated, there has no reason yet appeared to me sufficient to create a doubt. No new ones have come to my knowledge since, calculated to cast any additional light on the subject. I can only inform you, that the tremors have continued to the present time. We feel them at this place about one in ten or twelve days, (sometimes oftener) and they are of all grades, from very sensible shakes down to what are barely perceivable.—I think I have discovered one circumstance (and others have remarked the same) that the heaviest shocks usually occur in the coldest turns of weather, and also in the coldest part of the day, viz. between two o'clock A. M. and day-break. But I cannot imagine what connection there can be between cold and the cause of this phenomenon. Indeed the circumstance may be merely accidental.

At New Madrid (150 miles below us) I am credibly informed, that a day does not pass without the occurrence of from one to eight or ten distinct tremors. The attorneys of St. Geneva have just returned from attending court at that place, and assure me this is a fact. They also say they distinctly heard wind (or steam) issue from the old fissures, and from wells, making a whistling noise, and strongly scented with sulphureous smell.

It appears to be a general sentiment among common people in this country, that the seat of the phenomenon is at a distance west of the Mississippi. Those at New Madrid say nearly west of them—those here say southwest from this place; which would intersect a west line from New Madrid pretty far from the river, and I believe on the highlands. But the circumstance which it seems has produced this sentiment, is not wholly to be relied on;—it is the fancied direction which the *sound* attending the shocks appear to come from. I have al-



ways been asleep when the heavy shocks commenced, and therefore have not heard the sounds: but I can hardly conceive that the identical sound heard in one place proceeds from any great distance; it probably is produced from vents near at hand, through which some portion of the imprisoned vapour escapes; and also by the cracking and rubbing of parts of the earth around us. If so, then the sound will appear to come from such direction as those vents and cracks are situated from us, which perhaps is always governed by the lowest ground. S. W. from this place is the lowest part of the country in any direction here.

Yours, &c.

P. S. SOON after finishing the foregoing, viz. half after 2 o'clock, P. M. a shock of earthquake came on, and proved as severe as any for several weeks past; and the weather is unusually warm.—So that their connection with cold is rendered more doubtful.—I heard no sound,

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KASKASKIA, Feb. 1, 1813.

OUR earthquakes become more rare, and less severe. A fortnight has occurred between perceivable shocks. We had two sensible ones about a week since. We hope the phenomenon is winding up, although many apprehend a more terrible one than has been experienced will close the series. They quote that of Lima. But I think no calculation can be made.

I have the honour to be, with much respect,

Dear Sir,

Your very obedient,

humble servant,

STANLEY GRISWOLD.

## TESTUDO CORIACEA.

THIS rare animal, which in one instance only, has been taken on the coast of the United States, is known to be an inhabitant of milder regions than the latitude of  $40^{\circ} 40'$ , where this individual was taken. We are therefore inclined to think that this solitary being had strayed from its usual places of resort. It is the largest of the kind that has been heretofore described. In the account which was given of it in our last volume, a correct drawing of the animal was promised, which we are now enabled to lay before our readers, respectfully referring them to the former description. (p. 191 & seq.)

*(Adjoining is the Plate.)*







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## INTELLIGENCE.

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### OBSERVATIONS ON THE WEATHER AND DISEASES OF THE CITY OF NEW-YORK, AND OF THE ARMY.

No remarkable atmospheric occurrence has taken place during the last period of the winter, and of the beginning of the spring, although we experienced in February and March an intensity of cold disproportionate to the mildness of the preceding months. The frost, however, rarely penetrated deeper than two inches into the ground, and four inches in fresh water surfaces. Accidental deaths of men or cattle by frost, were unheard of; the snow continued but a short period of time on our walks, and the navigation of our rivers was seldom interrupted by ice or by storms.

With circumstances apparently so favourable to the preservation of health, it is difficult to account for the renewal in our city of malignant catarrhs, peripneumonia notha, or the winter epidemics, which have prevailed over extensive regions to the east and north of us. Perhaps we might apply to these occurrences of disease, what the great Sydenham had premised of the causes of similar epidemics throughout the continent of Europe, in the year 1629; for he supposed that after frequent earthquakes and other convulsions of nature, some deleterious cause might consequently vitiate the atmosphere and constitute disease.\*

From the most authentic sources of information, we feel authorised to state that one hundred deaths, by the peripneumonia notha, have unhappily occurred during

\* Sicuti particulæ aquæ atque igneæ etsi in aëre sint semper presentes, alias neque aëri, neque homini tam subitanæ alterationem inducunt,—constitutioni catarrhali favere alia impuriora atque extraordinaria effluvia, in aërem deducta, sive a rebus inanimatis, sive ab animatis, perpendamus.—(*Leg. apud Sydenham de Febre Catarrhali, &c.*)

the last three months, striking principally individuals who had been more exposed to external air, fatigue, and intemperance, more men than women, many more under than above the age of 50 years. If this is inferred as a proportion of deaths similar to those observed in the New-York Hospital, there has been no less than three hundred cases of peripneumonia notha, in the city and suburbs. From observation it has also been concluded that in a greater part of those cases, the character of the disease was such as to forbid the use of the lancet. It will be no doubt a perplexing subject of discussion to reconcile this last restriction with cadaveric inspection, instituted by the professors and physicians of the hospital, which has disclosed that the disease, was accompanied with extensive ravages in the chest, of inflammations, effusions, adhesions, and accumulations of morbid mucus. Moreover, in many cases, upon opening the head, there was found under the *pia mater*, a considerable effusion of lymph, and a great turgescence of the blood-vessels through the convolutions of this viscus.

We shall not fail to present to our readers, all possible inquiries and remarks for the establishing the true characters of this disease, and defining the best mode of treatment, as soon as we shall be put in possession of the documents and authoritative papers that can be collected on that subject.

The most prominent disease of the armies on the lines, has been of the nature of the winter epidemic, of which a detailed account by Dr. James Mann, Hospital Surgeon, is inserted in this number, and another of Dr. Silas Fuller, Surgeon, 23d Regiment United States infantry is filed for our next number.

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*Annual Report of the Governors of the New-York Hospital to the Legislature of the State.*

IN this interesting statement we find that during the last year, 1492 patients have been under the care of that institution.



That of this number 904 have been cured, and 156 only died: the others were either removed or are remaining.

Out of the same general number 176 were lunatics; 64 of which were cured and 11 died. In the catalogue of diseases herein enumerated, we regret that it is not specified, which of them were subjected to surgical operations. We will, however, present them all to our readers, with their proportion of cure. It is to be observed that the difference is made out by those who died, who were removed, or are remaining.

<i>Number of Diseases Cured.</i>		<i>Number of Diseases Cured.</i>	
10	Abscess 6	8	Hernia humoralis 6
2	Apoplexy,	3	Hepatitis 3
2	Anthrax 2	4	Hernia 2
4	Amenorrhœa 2	5	Herpes 4
1	Abortion 1	4	Hæmoptysis 2
3	Asthenia 1	2	Hæmorrhoids 2
15	Burn 8	1	Hysteria 1
2	Cancer	2	Hydrocele 1
41	Catarrh 28	2	Hypochondriasis 1
6	Caries 3	1	Ischuria 1
5	Cataract 1	3	Jaundice 2
5	Cephalalgia 1	2	Leucorrhœa 1
1	Colic 1	1	Lientery,
1	Compress. of Brain	1	Lumbago 1
1	Cholera 1	1	Mania
47	Contusion 31	2	Menorrhagia 2
2	Cynanche Tonsillas 2	5	Morbus Coxarius
20	Diarrhœa 13	1	Necrosis
2	Deafness 1	16	Ophthalmia 9
3	Dislocation 3	1	Ozæna
31	Dropsy 13	8	Paralysis 6
11	Dysentery 9	2	Paronychia 2
2	Dyspepsia 1	46	Pneumonia 31
3	Enuresis 2	8	Pleuritis 5
1	Enteritis 1	1	Polypus Nasi 1
1	Exostosis, 1	81	Phthisis Pulmonal 21
1	Elephantiasis	6	Phlegmon 4
4	Epilepsy	1	Phrenitis
6	Erysipelas 6	1	Pneumonicula 1
1	Eruptions 1	190	Rheumatism 137
24	Fractures 20	212	Syphilis 137
109	Fevers 83	7	Scrofula 3
9	Fistula 6	1	Schirrus uteri
37	Frost 24	3	Sprain 3
41	Gonorrhœa 31	4	Stricture 2
2	Gleet 2	2	Scorbutus 1
1	Gangrene 1	6	Sarcocele 3
1	Gravel	1	Tinea Capitis 1
1	Gutta Serena	132	Ulcers 82
1	Hemicrania	1	Ulcerated Cornea
3	Hematemesis 3	1	Varicocele 1
3	Hemiplegia 1	27	Wounds 21
1	Hydrothorax 1	9	White Swelling 1

*Patients admitted into and discharged from the Asylum for Lunatics.*

Admitted.							Discharged.				
Remaining 31st Dec. 1811.	Admitted in 1812.	Total.	Cured.	Relieved.	Request.	Incurable.	Disorderly.	Eloped.	Died.	Total discharged and died.	Remaining 31st Dec. 1812.
52	127	179	64	14	22	1		3	11	115	64

The lying-in ward of the Institution has had 34 women, 28 of whom have been delivered of living children, and all discharged well.

## MEDICAL DEPARTMENT.

## PHYSICIANS.

Samuel L. Mitchill,  
James S. Stringham,  
Wm. Hamersley,  
J. C. Osbourn,

Archibald Bruce, Physician to the Asylum.

Wm. Van Deursen, House Physician and

[Librarian.

James Inderwick, House-Surgeon.

Richard Sadleir, Apothecary.

## SURGEONS.

Wright Post,  
Richard S. Kissam,  
Samuel Burrowe,  
Valentine Seaman.

*Condition of the Poor House in the City of New-York, 1812-13.*

RICHARD FURMAN, Esq. Superintendent of the Alms-House, reported to the Common Council, on the first day of April, 1813, that during the year preceding that date, that is from 1st April, 1812, the following facts and events had taken place.

The prisoners and vagrants in the City Prison and Bridewell, the maniacs in the City Asylum, and an account of the donations distributed to the out-door poor during the time aforesaid and for the support of Indians, and transportation of paupers, stood thus :

Paupers admitted into the House from the 1st of April, 1812, to the first of April, 1813. 2814

Discharged, 1316

Died,	233
Total discharged and died,	1549
Remaining in the House on the first of	—
April 1813,	1265

Their sex and places of birth are as follows, viz.—  
Men, 252; women, 468; boys, 299; girls, 246—Total 1265.

Of these there were born in the city of New-York, 624; in the state of New-York, 78; in the United States 129; in England 82; in Scotland 37; in Ireland 246; in Germany 43; in France 9; in Africa 9; in the West-Indies 8.—Total 1265.

Number of prisoners and vagrants in the City Prison, and Bridewell, April 1, 1812—Men 62; women, 66—Total 128.

Number of maniacs in the City Asylum, paid for by the Superintendant of the Alms-House, on the 1st of April, 1813.—Men, 23; women, 22—Total, 45.

During the same time, relief was afforded to the out-of-door poor, that is to the distressed, who though they had places to live in, were in want of something to live upon. The number of such families, who received the donations distributed about the city, was 1973, and the number of persons composing those families was 8253; that is more than 4 persons to each family of those needy inhabitants.

Cash paid for support of Indians, and to sundry towns for the support of paupers, belonging to this city, 297 dollars 89 cents; cash paid for transporting paupers, 604 dollars.

This information added to that in the preceding article respecting the state of the Hospital, will afford to those who inquire into the machinery of society, either as physicians, police-officers, or political economists, abundant matter for reflection. They will see that poverty accompanies wealth as shadows do the substance. The expense of the institution is proportionally great.



OBJECTIONS TO VACCINATION, ARGUED WITH GREAT  
FORCE AND CLEARNESS.

AMONG the publications which we have recently received from the continent of Europe, is an important memoir on the continued benefits of inoculating for cow-pox, in the dominions of the empire. This performance was the result of much careful observation, and was prepared for the National Institute by very learned and able men. When it is stated that its authors were Messrs. Berthollet, Percy, and Hallé, its value will be instantly perceived.

It is entitled "*Exposition des faits recueillis, jusqu'à présent, concernant les effets de la vaccination; et l'Examen, &c.*" that is, "Statement of the facts hitherto collected, relative to the operation of Cow-Pox; and an inquiry into the objections made at different times against it, and which objections some persons continue to make against this practice." Having been read to the physical and mathematical class of the Institute in September 1812, it received a Vote of approbation; and was ordered to be printed for the twofold purpose of general distribution, and of insertion in their ensuing volume of transactions. It accordingly, has made its appearance under the certificate of the secretary, Mr. Cuvier.

This committee of the Institute are strong and decided advocates of the vaccine practice. They have given sufficient evidence of their zeal by extending their exposition to 55 pages of quarto print. Their attention has been more particularly directed to answering and refuting the following objections: 1. That as the cow-pox was, like the small-pox, a contagious disease, but differed from it in not being attended with an eruption of pustules over the body, the revolution wrought by the cowpox in the constitution was incomplete, and consequently it left an unwholesome taint or leaven behind it. 2. That the vaccine virus gave rise to secondary eruptions, attended with serious disorder, and even great mischief to the patient. 3. That certain dis-

agreeable accidents and mishaps which had occurred early after the insertion of the cow-pox matter, had been caused by its unfriendly action. 4. That in cases where vaccination had been agreeably performed and finished, diseases had arisen, and health had been destroyed under such circumstances as to induce a persuasion that the new inoculation left in the body, some germ of future maladies, or some latent ill which would break out, at a time indefinitely remote. 5. That the small-pox inoculation seemed to have worked a happy change in the system of certain individuals, and to have confirmed their health; while the cow-pox, even allowing its preventive power, did not so renovate and amend the constitution; but left it liable to morbid attacks, insomuch that the small pox, upon the whole ought to be preferred, as a remedy to some predispositions and evils, which cow-pox cannot guard against.

In proceeding to answer these several objections, the Committee have arranged their subject under the following heads: 1. To know whether the general eruption and fever accompanying the small-pox, but not attending the cow-pox, are necessary to a purification of the blood, without which *depuration*, dangerous consequences may ensue? 2. To find whether facts demonstrate that vaccine virus introduced into the human body, does produce eruptive diseases, or disagreeable symptoms which ought to be ascribed to the paucity, imperfection or want of pustules? 3. To ascertain whether the vaccine virus, actually occasions, in the first instance, on its reception into the body, and during its primary operation, any fatal accident whatever? 4. To prove whether the vaccine matter so inserted, does, after its own proper disease is terminated favourably, give rise to consequential disorders, more or less violent, and which may perhaps have an unfavourable issue? 5. To establish conclusively, if, on the supposition that the small-pox inoculation has the advantage of, sometimes contributing to the cure of certain chronic distempers, whether notwithstanding, that advantage is peculiar to it, and ought therefore to give it a decided preference over vaccination?

All these queries are distinctly and separately exa-

mined ; and, after full discussion, decided in the negative.

The reporters next propose a sixth query to this effect : how far does cow-pox insure against small-pox, viewed in comparison with the cases of re-infection by small-pox in those who have been inoculated with variolous matter, and such as have had the disease in the natural way? Herein they discuss the subject of the *true* virus, and the *spurious* ; which in reality is not vaccine pus at all ; and decide that the chance of suffering the cow-pox a second time, is, at most, not greater, than that of second infections of inoculated, and natural small-pox. The proportion of second infections of cow-pox, reported to the Central Committee of Vaccine Correspondence in Paris, being no more than 7 individuals, out of 2, 671, 622 vaccinations, which is but about 1 in 381, 660 : a ratio so exceedingly small as to reduce the hazard almost to nothing. And it ought to be remembered that it was twelve years before the date of this report, that the cow-pox was carried to France, to wit, in 1802. There has been, of course, much time and opportunity to watch it carefully.

The committee strengthen their inquiry, by informing the Institute, their conviction on the following points : 1st. The cow-pox does not carry into the human frame, an agent of disturbance to the organs, that requires to be thrown off by an eruption, like small-pox. 2. The eruptions which now and then appear early after vaccination, have no necessary connexion with cow-pox, nor ought to be ascribed to it, but are owing to other and assignable causes, existing before or during the time of vaccination. 3. The unhappy events which have sometimes befallen vaccinated persons, are unquestionably derived from other sources than the cow-pox ; and their occurrence during the vaccine process, is only a coincidence, and not an effect ; a concurrence, and not a consequence. 4. The disorders which have been observed occasionally to follow cow-pox, are the results of other and pre-existing diseases, or of peculiar states of constitution, and by no means the offspring of vaccination, which generally leaves the body quite healthy, and wholly free from any chronic or lingering ailments. 5.



Many obstinate and afflicting symptoms have been known to disappear after vaccination ; and those beneficial results are so numerous and well-established, that, when compared with the alleged benefits of small-pox in cleansing and scouring the constitution, they give cow-pox the preference even in the very case wherein small-pox has been supposed to excel it. And 6. The preservative or preventive operation of vaccine virus, (always presuming it to be fresh, pure and good) duly applied to the human body and acting upon it, is, on the most moderate estimate, as certain and efficacious against the small-pox, as the small-pox is against itself, in either the inoculated or natural form.

They conclude by remarking, that the cow-pox has advantages of great importance over inoculated small-pox ; inasmuch as it can arrest, circumscribe, and finally extinguish the epidemic small-pox, to such a degree as to lessen considerably its mortality, particularly among infants and children and thereby to cherish population. And they indulge the expectation, that by means of this mild, though powerful agent, small-pox will become extinct, and no longer be capable of exciting the groans of afflicted humanity.

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A LAW OF THE U. S. FOR ENCOURAGING VACCINATION.  
PASSED MARCH 3, 1813.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the President of the United States be, and he is hereby authorised to appoint an agent to preserve the genuine vaccine matter, and to furnish the same to any citizen of the United States, whenever it may be applied for, through the medium of the post-office ; and such agent shall, previous to his entering upon the execution of the duties assigned to him by this act, and before he shall be entitled to the privilege of franking any letter or package as herein allowed, take and subscribe the following oath or affirmation, before some magistrate, and cause a certificate thereof to be filed in the

general post office : “ I, A. B. do swear (or affirm as the case may be) that I will faithfully use my best exertions to preserve the genuine vaccine matter, and to furnish the same to the citizens of the United States ; and also, that I will abstain from every thing prohibited in relation to the establishment of the post office of the United States.” And it shall be the duty of the said agent to transmit to the several post-masters in the United States a copy of this act : And he shall forward to them a public notice, directing how and where all applications shall be made to him for vaccine matter.

The second section of this law provides for the immunity of the correspondence of the agent, appointed to transmit vaccine matter by mail, throughout the U. S. The President has appointed Dr. James Smith of Maryland, agent for the above purpose.

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## INAUGURAL !

### MANSON'S LATIN DISSERTATION ON THE YELLOW FEVER.

ALEXANDER MANSON, ESQ. late a surgeon of the British navy, has favoured us with a copy of his dissertation, written in the Latin tongue, on the yellow fever. He served in the fleet on the West India station ; and during that service had opportunities, both of observing and treating that formidable disease. It might therefore be reasonably supposed, that the opinion of such a person on the origin of the malady, and on the practice which ought to be followed during its prevalence, would be weighty and respectable.

Accordingly we examined his pamphlet of seventy-one pages, “ de Febre flava,” for the purpose of learning his sentiments. We find him writing like a man of sense and discernment, and narrating the things he witnessed in an impressive manner. He appears so plain, so consistent, and so competent, that an abstract of the evidence he offers, cannot fail to be interesting.

Dr. Manson decides unequivocally, that yellow fever is a synocha or inflammatory fever, (p. 3) ; attacking

Europeans of adult, stout, and vigorous constitution soon after their arrival in tropical latitudes, while Negroes, Creoles, and seasoned Europeans almost always escape it, (p. 5); and he observes that aged, debilitated and infirm men from the northern parts of Europe, not only have an exemption from the distemper, but actually experience an improvement of health, (p. 6.)

He marks a radical and characteristical distinction between the yellow fever and the remitting fever; a leading feature of which is, that the former very seldom seizes those who are habituated to the climate, while the latter frequently harrasses them a considerable part of their lives. He considers Mosely as having understood the nature of yellow fever better than any other writer. But he quotes Jackson, Blane, Clark, and Maclean with great respect, especially in relation to the discrimination they have made between the two diseases.

The author states his utter disbelief in the alleged contagiousness of yellow fever, p. 20, 21; repels the pretended importation of the virus from Boullam into Granada, and ascribes its origin to high heat, too stimulant food and drink, and immoderate exercise, (especially in the augmented temperature and impure air of cities) applied to unassimilated constitutions. On this point he expresses himself with so much correctness of judgment, that we should have been very well pleased to have seen his arguments stated in the vernacular tongue, instead of being conveyed through the medium of a dead language. The candour and liberality of his mind, are impressed on every page; and they present to the learned reader an example worthy of his imitation. The error and delusion of supposing contagion to belong to yellow fever, have been uniformly by us exposed and demonstrated; (*see Medical Repos. passim.*)

That he might the more completely and unanswerably refute the nonsense of contagion in yellow fever, he relates the case (p. 25,) of a sailor seized with that form of synocha, while under the influence of solar heat, muscular exertion, and stimulation by rum on a watering-party for a ship, at Martinique, in 1809.



He states too, that after the capture of that island, the troops enjoyed excellent health for two months; there being few cases of yellow fever, and those invariably arising from intemperance. But after the surrender of the place, lieutenant general Sir George Prevost, who had come from Halifax in Nova Scotia, to aid in the expedition against the French colony, embarked after the glorious success, for Halifax once more. During the voyage from Martinique to Halifax, the crew of the ship in which they were sailing, were attacked with a violent disease. Within seven or eight days after their departure, about forty men were recorded on the sick list of the Surgeon with yellow fever, or something of that type. Solemn inquiry was instituted to its cause and origin. It could not be traced to the place of departure, because there all was well. In the embarrassment of the passengers and crew concerning their malady a fortunate discovery was made. This was, that the captain had through extraordinary caution ordered the dead-lights to be closed, while the vessel was yet in the harbour. A few days after she had launched upon the ocean the fever broke out. It was most properly ascribed to heat and seclusion.

Mr. M. represented to the captain the propriety of opening the lights, of employing the windsails, and thinning the hammocks between decks. As the air was changed and the lodgers removed, the disease began to decline, and vanished as rapidly as it had arisen; without the aid of fumigation, or any other mode of destroying contagion. All the patients recovered by the employment of the strongest antiphlogistic treatment; and there was not a single instance of the return of fever, although the Peruvian bark was not employed after the subsidence of the inflammatory symptoms. (p. 28.)

As to the management, the author divides the disease into three stages; and proposes two indications of cure; 1st. To moderate early and speedily the morbid action, which threatens to overwhelm the system; and 2d, to sustain and renew the strength, by proper diet and medicines.

Conceiving the disease to be highly inflammatory, he recommends prompt and copious venesection, without

the loss of a moment's time ; the blood to be drawn from a large orifice, and suffered to run until fainting is produced. To this he adds washing with cold water, and the application of cloths wetted with the briny fluid of the ocean to the head. One or more enemata were employed to loosen the bowels ; and then Senna, with Epsom or Glauber's salt was administered. Or, calomel and jalap were taken, with the same intention, and the intestines thereby kept open. Upon this he advises the use of the purple foxglove, as a most admirable remedy in inflammatory diseases. He condemns the extravagant and salivating operation of quicksilver, and quotes the late Dr. Saunders as saying, that out of twenty-six or twenty-seven soldiers labouring under yellow fever, and treated according to the mercurial practice, by its distinguished patron and advocate, twenty-one died (p. 57.) This, he thinks, is no very flattering recommendation of the remedy. And he cites Dr. Jackson as affirming that the mortality in the detachment of the British army, upon which the mercurial practice was first tried, has perhaps been scarcely ever exceeded, (p. 58.) Emetics are considered by Mr. M. pernicious prescriptions. And as to sudorifics, he thinks them improper or unnecessary in yellow fever ; their effects being very uncertain ; and where they do not excite perspiration, they exasperate the phlogistic symptoms, (p. 58.)

On taking leave of this respectable performance, we cannot refrain from the expression of our surprize that the instructive writings of our countrymen on this disease, and the valuable pages of our various periodical journals, seem to be equally unknown, with but one exception, to the students in the Scottish metropolis. We hope our trans-atlantic brethren will soon become acquainted with the magazine of knowledge, which North America affords them.

INQUIRIES UPON THE PAINFUL SUBCUTANEOUS  
TUBERCLES.

THE first mention of this disease seems to have been made by Cheselden, in one of the later editions of his anatomy, to which my attention was directed by Mr. Allan. After having described the structure of the cutis or true skin, he says, "Immediately under the skin of the shin-bone, I have twice seen little tumors, less than a pea, round, and exceeding hard, and so painful, that both cases were judged to be cancerous; they were cured by extirpating the tumor: but what was more extraordinary, was a tumor of this kind, under the skin of the buttock, as small as a pin's head, yet so painful that the least touch was insupportable, and the skin for half an inch round was emaciated; this too I extirpated, with so much of the skin as was emaciated, and some fat. The patient, who, before the operation, could not endure to set his leg to the ground, nor turn in his bed without exquisite pain, grew immediately easy, walked to his bed without any complaint, and was soon cured." (Cheselden's Anatomy, 10th edition, page 136.) It appears from this quotation, that Cheselden had thrice met with this disease: he does not mention whether, in the two first cases, the patients were male or female: in the last, the disease seems to have occurred in a man, who suffered more severely than any of the patients whom I have had an opportunity of seeing, although the tubercle did not exceed the size of a pin's head. In all the three cases, a cure was accomplished by the extirpation of the little tumor.

Camper describes a species of tubercle not larger than a pea, as giving rise to very severe pain, and requiring extirpation to produce a cure. He mentions his having twice met with the disease in females; and adds, that he has more than once seen it in men. He informs us also, that the tubercles are real ganglia, and have their seat within the coats of the nerves. It seems to me doubtful, whether, by the term ganglion, as here



applied, he means to say, that the complaint arises from a diseased state of one of these little swellings met with in different parts of the healthy body, at the junction of one nerve with another, properly termed ganglia; or that it is formed by a morbid enlargement of some portion of a nerve. Nor does it appear, whether he was enabled, by accurate examination of the structure of the tubercles, to ascertain that they really are situated within the nervous coats.

Dr. Bisset, in the third volume of the *Memoirs of the Medical Society of London*, gives a minute and distinct account of the symptoms and progress of what he terms "An extraordinary irritable sympathetic tumor."

This tumor, Dr. Bisset informs us, appeared originally in the form of a small pimple, of the colour of the skin, on the out side of the left leg of a girl of 13 years of age; in and about which pimple she usually had some little uneasiness immediately before a great fall of rain or snow, and in very windy weather. The tumor remained in this state till soon after she first conceived, when it increased to the size of a large filbert, and became in the highest degree irritable. The patient now began to be affected with a violent periodical pain in it, which recurred twice or three times, and some times oftener, in 24 hours, at unequal and uncertain intervals; the duration of each paroxysm often varying a little, and never exceeding one hour. The pain darted when most violent, to the origin of the *tibialis anticus* and from thence often upwards to the spine of the *ilium*. The pain was instantly excited also, during the pregnant state, by the tumor being rudely touched with a finger or with the skirts of her petticoat; but these accidental paroxysms were always of short duration.

As soon as this patient was delivered of her first child, the little tumor became at once exempt from any uncommon irritability, and the periodical paroxysms of acute pain quite ceased; and in this state it remained during 13 months, except that some little uneasiness was perceptible before the falling of much rain or snow. In the end of that period, the patient having again conceived, the tumor acquired its former irritability, and

she was affected precisely in the same manner as she had been during her first pregnancy. At this period an attempt was made, by a surgeon, to cure the disease, by making a crucial incision into the tumor, to promote suppuration, and to destroy its irritability; but as this failed, excision was had recourse to, which proved effectual. Immediately after her third conception, however, the little tumor was reproduced, but did not increase quite to its former size, and the paroxysms of pain commenced and returned two or three times daily, as during the former pregnancy.

When the third child was born, the tumor became at once perfectly indolent, as it had formerly done. The patient having again conceived, the irritability of the little tumor commenced as usual, and the periodical pain became more violent than ever. At this time Dr. Bisset was consulted, who directed the application of the caust. commun fort. which produced its effect in 20 minutes. After the separation of the eschar, some small remains of the tumor were destroyed by caustic. By this means an effectual cure was accomplished, as during two successive pregnancies there was not the least return of the disease.—(*Memoirs of the Medical Society of London, Vol. III. page 58.*)—*Edinburgh Medical and Surgical Journal, October, 1812.*

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*New Publications received by the Editors.*

1. Sketches historical and descriptive of Louisiana. By Major Amos Stoddard.
2. Memoirs of the Columbian Chemical Society of Philadelphia, vol. I.
3. Annual Address delivered by appointment before the society for the Promotion of Useful Arts, at the Capitol in the city of Albany, on the third day of February, 1813. By Theodoric Romeyn Beck, M. D.
4. State of the New-York Hospital for 1812.
5. Information respecting the origin, progress and efficacy of the Kine-Pock Inoculation, in effectually and forever securing a person from the Small-pox, &c. &c. By Benjamin Waterhouse, M. D. &c.

6. Report, in part, of the committee appointed to ascertain, the number of persons employed in, and to inquire into the state and condition of the Patent-Office at Washington, June 12, 1812.

7. A description of the Columbian Steam Engine, with reflections on the origin of Steam-Boats, and Steam-Waggons. By Oliver Evans.

8. A catalogue of Books, Maps and Charts belonging to the Library of Congress, at Washington; with the Statutes and Bye-Laws. By the Joint-Committee of the two houses.

9. Memoranda, by which it is attempted to be shewn, that an improved model may be adopted in the construction of ships, by a new application of well-known principles. Ascribed to Frederic Tudor, Esq.

10. The Act of Incorporation, together with the by-laws and rules of the Rhode-Island Medical Society.

11. Dissertation sur l'Ophthalmie, &c. présenté à la Faculté de Médecine de Paris, le 29 Aout, 1812, par Franc. Berger, de New-York, *for the degree of Doctor.*

12. Dissertatio medica inauguralis de Synochâ sive febre flavâ, quam—eruditorum examini subjecit Alexander Manson, Scotus, nuper classis regię Britannicę chirurgus, Pridie Idus Septembris, 1811.

13. Printed copy of the general third census or enumeration of all the inhabitants of the United States and territories thereof, by order of the Secretary of State. in folio.



OFFICERS OF THE STATE MEDICAL SOCIETY.

Dr. John R. B. Rodgers, of New-York, President.

Joseph White, of Otsego, Vice-President.

James L. Van Kleeck, of Dutchess, Treasurer.

John Stearns, of Albany, Secretary.

Eli Burrit, of Troy,

Wm. Reed, of Montgomery,

Jesse Sheperd of Schoharie,

John Stearns, of Albany,

Elihu Hedges, of Orange,

} Censors.



328 *Officers of the State Medical Society, &c. &c.*

Dr. John R. B. Rodgers, New-York,  
Joseph White, Otsego,  
Asahel E. Payne,  
Wm. Wilson,  
Van Kleeck, Dutchess,  
Levi Ward,  
Westel Willoughby, Herkimer,  
Lyman Spalding, Professor of Anatomy in Fairfield, and Dr. George Shattuck, of Boston, honorary members.

}  
Corresponding  
Committee.

Dr. Romaine, of New-York, and Dr. Bard, of Dutchess, permanent members.

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*Officers of the New-Hampshire Medical Society for 1812.*

Nathan Smith, M. D. President.

Lyman Spalding, M. D. Vice President.\*

Dr. James H. Pierrepont, Secretary,

Hon. Samuel Tenney, M. D. Treasurer.

\* Dr. Lyman Spalding, Professor of Anatomy of Fairfield, and permanent member of the Medical Society of this State, has lately fixed his residence in New-York, and offered to the public his professional services, in the principal branches of the healing art.

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OBITUARY.

Died, at Funchal, Madeira, in April, 1812, ROBERT WILLAN, M. D. aged 55 years; the ingenious author of many valuable medical treatises, and of the description and treatment of cutaneous diseases, with exquisite and splendid plates.

At Philadelphia, 19th April, 1813, the celebrated BENJAMIN RUSH, M. D. aged 75 years, Professor of the Institutes of Medicine, in the University of Pennsylvania, Member of the Principal Faculties of Medicine, and literary Institutions of Europe and America.

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*Tribute of Respect to the Memory of the late Professor  
BENJAMIN RUSH.*

Samuel L. Mitchill, Professor of Natural History in the University of New-York, has been appointed by the Board of Trustees of the College of Physicians and Surgeons, to deliver an eulogium of that eminent physician and philosopher.

The County Medical Society, at an extraordinary meeting, on the 27th instant, resolved, that the members thereof wear crape, during 30 days, and that a portrait of Benjamin Rush be procured, and deposited in the New-York City Hospital.